

2

**Saugus River and Tributaries, Lynn, Malden, Revere and
Saugus, Massachusetts**

Flood Damage Reduction

Volume 7

Appendix

J - Feasibility Study and EIS/EIR Comments and Responses Section C - Final Report Review

DTIC
ELECTE
APR 19 1991

AD-A235 142

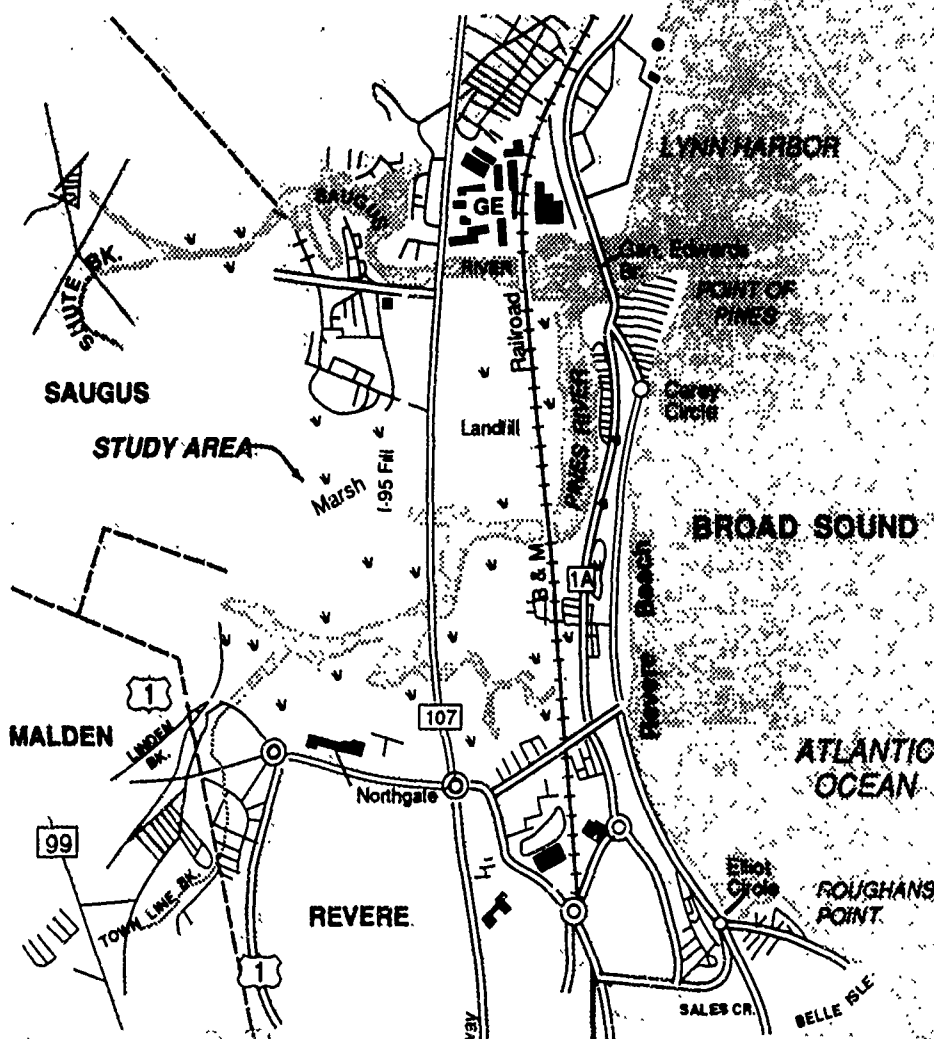


DTIC FILE COPY

April 1990



US Army Corps
of Engineers
New England Division



Copyright in Unpublished

91 4 16 189

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Please forwarding copies for the collection of information is designed to address 1. How for response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information and comments regarding the burden estimate or any other aspect of the collection of information, including suggestions for reducing the burden, to Washington Headquarters Service, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE April 1990		3. REPORT TYPE AND DATES COVERED Feasibility Report 1990	
4. TITLE AND SUBTITLE Saugus River and Tributaries Flood Damage Reduction Study: Lynn, Malden, Revere and Saugus, Massachusetts, Feasibility study and EIS/EIR - comments and responses on Final Report Review Vol 7, App. J-Sec C				5. FUNDING NUMBERS	
6. AUTHOR(S) Hunt, Robert - Project Manager					
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Corps. of Engineers New England Division 424 Trapelo Road Waltham, MA 02254				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) CENED-PL				10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES Title varies: Flood Damage Reduction volume 7, Appendix J - Feasibility Study and EIS/EIR Comments and Responses on Final Report Review.					
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for Public Release Distribution Unlimited				12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) Includes all Corps. responses to letters received on the feasibility report environmental impact statement and environmental impact report.					
14. SUBJECT TERMS Floods Floodplains Flood Control				15. NUMBER OF PAGES 61	
Flooding Dikes Urban Planning				16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL		

NSN 7540-01-280-5500

91 4 16 182

Standard Form 298 (Rev 2-89)
Prescribed by ANSI Std. Z39-18
298-102

GENERAL INSTRUCTIONS FOR COMPLETING SF 298

The Report Documentation Page (RDP) is used in announcing and cataloging reports. It is important that this information be consistent with the rest of the report, particularly the cover and title page. Instructions for filling in each block of the form follow. It is important to stay within the lines to meet optical scanning requirements.

Block 1. Agency Use Only (Leave blank).

Block 2. Report Date. Full publication date including day, month, and year, if available (e.g. 1 Jan 88). Must cite at least the year.

Block 3. Type of Report and Dates Covered. State whether report is interim, final, etc. If applicable, enter inclusive report dates (e.g. 10 Jun 87 - 30 Jun 88).

Block 4. Title and Subtitle. A title is taken from the part of the report that provides the most meaningful and complete information. When a report is prepared in more than one volume, repeat the primary title, add volume number, and include subtitle for the specific volume. On classified documents enter the title classification in parentheses.

Block 5. Funding Numbers. To include contract and grant numbers; may include program element number(s), project number(s), task number(s), and work unit number(s). Use the following labels:

C - Contract	PR - Project
G - Grant	TA - Task
PE - Program Element	WU - Work Unit Accession No.

Block 6. Author(s). Name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. If editor or compiler, this should follow the name(s).

Block 7. Performing Organization Name(s) and Address(es). Self-explanatory.

Block 8. Performing Organization Report Number. Enter the unique alphanumeric report number(s) assigned by the organization performing the report.

Block 9. Sponsoring/Monitoring Agency Name(s) and Address(es). Self-explanatory.

Block 10. Sponsoring/Monitoring Agency Report Number. (If known)

Block 11. Supplementary Notes. Enter information not included elsewhere such as: Prepared in cooperation with...; Trans. of...; To be published in... When a report is revised, include a statement whether the new report supersedes or supplements the older report.

Block 12a. Distribution/Availability Statement. Denotes public availability or limitations. Cite any availability to the public. Enter additional limitations or special markings in all capitals (e.g. NOFORN, REL, ITAR).

DOD - See DoDD 5230.24, "Distribution Statements on Technical Documents."

DOE - See authorities.

NASA - See Handbook NHB 2200.2.

NTIS - Leave blank.

Block 12b. Distribution Code.

DOD - Leave blank.

DOE - Enter DOE distribution categories from the Standard Distribution for Unclassified Scientific and Technical Reports.

NASA - Leave blank.

NTIS - Leave blank.

Block 13. Abstract. Include a brief (Maximum 200 words) factual summary of the most significant information contained in the report.

Block 14. Subject Terms. Keywords or phrases identifying major subjects in the report.

Block 15. Number of Pages. Enter the total number of pages.

Block 16. Price Code. Enter appropriate price code (NTIS only).

Blocks 17 - 19. Security Classifications. Self-explanatory. Enter U.S. Security Classification in accordance with U.S. Security Regulations (i.e., UNCLASSIFIED). If form contains classified information, stamp classification on the top and bottom of the page.

Block 20. Limitation of Abstract. This block must be completed to assign a limitation to the abstract. Enter either UL (unlimited) or SAR (same as report). An entry in this block is necessary if the abstract is to be limited. If blank, the abstract is assumed to be unlimited.

**SAUGUS RIVER AND TRIBUTARIES
FLOOD DAMAGE REDUCTION**

**LYNN, MALDEN, REVERE
AND SAUGUS, MASSACHUSETTS**

**FEASIBILITY STUDY AND EIS/EIR
COMMENTS AND RESPONSES
ON FINAL REPORT REVIEW**

Volume 7

Appendix J - Section C



Department of the Army
New England Division, Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02254-9149

April 1990

Accession For	
WTIS GRARI	<input checked="checked" type="checkbox"/>
DNIC TAN	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

SAUGUS RIVER AND TRIBUTARIES FLOOD DAMAGE REDUCTION STUDY

Lynn, Malden, Revere and Saugus, Massachusetts/Summary of Study Reports:

Main Report and Environmental Impact Statement/Report (EIS/EIR): Summarizes the coastal flooding problems in the study area and alternative solutions; describes the selected plan and implementation responsibilities of the selected plan; and identifies environmental resources in the study area and potential impacts of alternative solutions, as required by the Federal (NEPA) and state (MEPA) environmental processes.

Plan Formulation (Appendix A): Provides detailed information on the coastal flooding problem and the alternatives investigated; includes: sensitivity analyses on floodgate selection (including location and size of gates and sea level rise); optimization of plans; comparison of alternative measures to reduce impacts; and public concerns.

Hydrology and Hydraulics (Appendix B): Includes descriptions of: the tidal hydrology and hydrology of interior runoff in the study area, and of wave runup and seawall overtopping, interior flood stage frequencies, tide levels, flushing, currents, and sea level rise effects without and with the selected project for various gated openings.

Water Quality (Appendix C): Includes descriptions of existing water quality conditions in the estuary and explores potential changes associated with the selected plan.

Design and Costs (Appendix D): Includes detailed descriptions, plans and profiles and design considerations of the selected plan; coastal analysis of the shoreline; detailed project costs; scope and costs of engineering and design; scope and costs of operation and maintenance; and design and construction schedules.

Geotechnical (Appendix E): Describes geotechnical and foundation conditions in the study area and the design of earth embankment structures in the selected plan.

Real Estate (Appendix F): Describes lands and damages, temporary and permanent easements and costs of the selected plan, including the five floodgate alignments studied.

Economics (Appendix G): Describes recurring and average annual damages and benefits in study area floodzones; economic analysis and optimization of alternative plans.

Socioeconomic (Appendix H): Describes the socioeconomic conditions in the study area and the affects of the selected plan on development in the floodplain and estuary.

Planning Correspondence (Appendix I): Includes all letters between community officials, agencies, organizations and the public and the Corps prior to agency and public review of the draft report.

Feasibility Study and EIS/EIR Comments and Responses (Appendix J): Includes all project revisions and comments and Corps responses to letters received during agency and public review. (In 3 parts: Sections A, B and C.)

Environmental (Appendix K): Includes basic data from investigations of environmental resources in the study area and presents the Mitigation Incremental Analysis.

SAUGUS RIVER AND TRIBUTARIES FLOOD DAMAGE REDUCTION STUDY

COMMENTS AND RESPONSES ON FINAL REPORT REVIEW

TABLE OF CONTENTS

CORPS RESPONSES TO LETTERS

SECTION A - STATE AND FEDERAL AGENCY REVIEW COMMENTS

A1	M. Ilyas Bhatti, Commissioner, Metropolitan District Comm.	Mar 5, 1990
A2	John DeVillars, Sec., Exec. Ofc. of Envir. Affairs	Feb 23, 1990
A3	Elizabeth Higgins Congram, Asst. Dir., Envir. Review, EPA	Mar 12, 1990
A4	Valerie A. Talmage, Exec. Dir., State Hist. Preser. Ofc, MHC	Feb 26, 1990
A5	R.P. Parmentier, Commander, U.S. Coast Guard	Feb 12, 1990
A6	Jonathan P. Deason, Dir., Ofc. of Env. Review, D. of Interior	Mar 20, 1990
A7	Thomas E. Bigford, Br. Ch., Nat. Marine Fish. Ser., D. of Com .	Apr 17, 1990

SECTION B - EOEa CERTIFICATE FOR MEPA PROCESS & COMMENT LETTERS

B1	John DeVillars, Sec., Exec. Ofc. of Envir. Affairs	Feb 20, 1990
B2	Jeffrey Benoit, Dir., MA Coastal Zone Management	Feb 12, 1990
B3	P. Shelley, et.al., Conservation Law Foundation	Feb 9, 1990
B4	Polly Bradley, Pres., Nahant SWIM, Inc.	Feb 5, 1990
B5	Judith C. Skinner, Board Member, MA Assoc. Conser. Comm.	Feb 6, 1990
B6	Stephen L. Smith, Asst. Planning Dir., Lynn Planning Board	Feb 6, 1990
B7	Richard Mytokowicz, Pres., Saugus Action Volun. for the Envir.	Jan 25, 1990
B8	Philip G. Coates, Dir., MA Div. of Marine Fisheries	Feb 6, 1990
B9	John R. Arrigo, Councillor, Revere City Council	Feb 2, 1990
B10	George V. Colella, Mayor, City of Revere	Jan 25, 1990
B11	Emery Richard, Commodore, Point of Pines Yacht Club	Jan 23, 1990
B12	M. Ilyas Bhatti, Comm., Metropolitan District Commission	Feb 9, 1990

SECTION C - LETTERS RECEIVED BY WASHINGTON LEVEL REVIEW CENTER IN RESPONSE TO DIVISION ENGINEER'S PUBLIC NOTICE

C1	George V. Colella, Mayor, City of Revere (see B10)	Jan 25, 1990
C2	Kenneth W. Holt, Env. Health Scientist, Public Health Service	Jan 25, 1990
C3	John R. Arrigo, Councillor, Revere City Council (see B9)	Feb 2, 1990
C4	Emery Richard, Commodore, Point of Pines Yacht Club (see B11)	Jan 23, 1990
C5	Peter Shelley, et.al., Conser. Law Foundation (see B3)	Feb 9, 1990
C6	Stephen L. Smith, Asst. Plan. Dir., Lynn Planning Bd. (see B6)	Feb 6, 1990
C7	Judith C. Skinner, Bd. Mem., MA Assoc. Conser. Comm. (see B5)	Feb 6, 1990
C8	Philip G. Coates, Dir., MA Div. of Marine Fisheries (see B8)	Feb 6, 1990

C9	Rex O. Tracy, State Conser., USDA Soil Conservation Service	Jan 31, 1990
C10	Polly Bradley, Pres., Nahant SWIM, Inc. (see B4)	Feb 5, 1990
C11	H. W. Heusmann, Waterfowl Biologist, MA Div. of Fish. & Wild.	Feb 14, 1990
C12	Jeffrey R. Benoit, Dir., MA Coastal Zone Management	Mar 1, 1990

SECTION D - FINAL REPORT TRANSMITTAL AND PUBLIC NOTICES

D1	Letter to John DeVillars, Sec., EOE	Dec 29, 1989
D2	Letter to Governor Dukakis, Senators & Congressmen	Jan 8, 1990
D3	Letter to Ilyas Bhatti, Comm., Metro. Dist. Comm.	Jan 8, 1990
D4	Letter to Interested Parties	Jan 8, 1990
D5	Public Notice	Jan 9, 1990
D6	Letter to Interested Parties	Jan 24, 1990
D7	News Release: Saugus River Report Issued	Jan 9, 1990
D8	MEPA Monitor, FEIR Available for Review	----
D9	News Release: Rivers and Harbors Board Considers Four Water Resources Reports	Mar 9, 1990
D10	News Release: Saugus Project Gains First Approval	Mar 30, 1990

APPENDIX J

CORPS RESPONSES TO LETTERS RECEIVED FOLLOWING FINAL REPORT REVIEW

<u>Letter</u>	<u>Response No.</u>	
A1	--	No response required.
A2	1.A.	The project is consistent with Federal policy and represents a wise investment of Federal funds. The Government's efforts, however, will be limited on this project until the Secretary of Environmental Affairs notifies the Corps of Engineers that his staff will continue to work closely with the Corps during design, and with this coordination, the project is expected to be found consistent with the Coastal Zone Management Program, and eligible for receipt of a Water Quality Certificate.
A2	1.	We concur and feel Chapter 8 of the EIS/EIR covers this topic.
A2	2.	We concur, however if greater than a 1:1 mitigation ratio is required by state agencies, it would be considered environmental enhancement by Federal standards. The enhancement costs greater than the 1:1 mitigation ratio may require a higher non-Federal cost sharing.
A2	3.	A comprehensive management document will be developed for the project and all acquired lands.
A2	4.	The division of responsibility for project features will be developed during design prior to executing the Local Cooperation Agreement.
A2	5.	The acquisition of the estuary storage area is a project feature.
A2	6.	The MDC is responsible for the preparation of the draft Section 61 Findings.
A3	1.	The Corps believes the project is consistent with the Coastal Zone Management Program and eligible for Water Quality Certification. The Commonwealth of Massachusetts has been asked for their concurrence / nonconcurrence with this view.
A3	2.	We expect the sponsors would request an investigation to modify the project in advance of a one foot rise being reached. The 40 closures per year would still not exceed a 1 percent duration of closure. Sea level rise interaction as discussed in FEIS Chapter 8, will be evaluated in the future (e. g. years 20-40) and the likely adoption of berm construction along upland reaches of the river banks will avoid wetland impacts where practicable. Sea level rise and project modifications are planned to be addressed in the ROD.

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

<u>Letter</u>	<u>Response No.</u>	
A3	3.	A clamflat restoration study is underway for the Jonesport, Maine disposal site. This will be a scientific quantification of benthic recolonization at this Corps project. The results will be available to EPA. The Corps' incremental analysis of mitigation (EC 1105-2-185) was included in Appendix K. NED welcomes EPA's offer of assistance.
A3	4.	The Corps encourages the investigation of all of the referenced environmental enhancements. The replacement of all flapgates with self-regulating tide gates and the total removal or breaching of the I-95 fill are not project features. The project does not exclude the opportunity of others to replace existing flapgates with self regulating gates, or to investigate alternatives to flood reduction provided by the I-95 fill. They can be re-considered in optimizing project mitigation, or as separate enhancement opportunities under new Corps guidelines.
A4	--	No response required.
A5	--	No response required.
A6	1.	The navigation gate and ten flushing gates recommended would provide the minimum opening at mid tide (peak flow) to achieve fish passage and safe navigation, and no significant change in estuary tide levels and flushing. This statement is based on an analysis of using the highest <u>local</u> gate flow velocities likely to occur. As stated on page 63 of the Main Report, "If local velocities are found to be less than the maximum used, up to two gates might be eliminated at a savings of \$6 million and the intertidal area dredged may be reduced. If two gates were eliminated there would be no measurable change to tide levels in the estuary. There would also be no significant change to flushing volumes." The <u>average</u> flow area needed to meet navigation and environmental criteria was increased to reduce the maximum local currents likely experienced through the gates and provide safe currents for navigation. Any proposed changes in the gates would be closely coordinated with resource agencies and the public to assure the criteria is met.
A6	2.	Assuming "minor" in your statement that "project-induced changes in estuary dynamics may range from minor to highly significant" refers to a one foot rise in sea level, then impacts would remain minor. The report recognizes that the recommended plan's gate closures should probably not exceed the one foot rise level (of 35 to 45 closures per year) before the project is modified back to 2 to 3 closures per year. The adverse impacts you note are indicative of the closures required if modifications do not occur for a 2 foot plus rise in tides.

CORPS RESPONSES TO LETTERS RECEIVED FOLLOWING FINAL REPORT REVIEW (CONTINUED)

<u>Letter</u>	<u>Response</u>
	<p><u>No.</u></p> <p>The impacts of constructing dikes and walls around the periphery of the estuary would be coordinated in a feasibility study and are expected to be minor, due to the need to avoid damage to the estuary and the need to retain the storage in the estuary. As stated on page 94 of the Main Report: "The cost reflects raising low areas along the riverbank with walls or dikes <u>on upland</u>, just as would have occurred without the project to keep pace with sea level rise." As footnoted on the page: "Approximately 40% of the first cost is for permanent easements." This high real estate cost is for upland placement of dikes and walls.</p>
A6	<p>3. The project would not restrict future options for responding to flooding from sea level rise. For example, by the time the accelerated rate of sea level rise is known in 25 to 30 years, and under the worst Case 3, a one foot rise occurs in 35 years, the project would have paid for itself and new policy decisions could be implemented. The project would allow sufficient time for an orderly and safe evacuation of the flood plain.</p> <p>The 3270 acres of SPN flood plain in Revere, Lynn and Saugus are highly developed at this time except for the 1650 acres (50% of flood plain) of estuary storage area to be acquired. Only 4 percent of the 100 year and 7 percent of the SPN flood plains are vacant and developable upland. Due to the intense development in place and the regional significance of the project area, public pressure currently exists and the additional 4 to 7 percent of area to be developed with or without the project would not create additional significant public pressures.</p>
A6	<p>4. The non-structural solutions would have significant long term impacts to the continued vulnerability for loss of life, health and property to the region. The continued illegal filling and loss of the estuary resources would likely continue without implementation of the project.</p>
A7	<p>1. The potential for the project to cause major adverse environmental impacts with sea level rise occurs with a rise of two or more feet, and only if the project is not modified to reduce the number of closures each year. Since negligible impacts occur up to a one foot rise, the report recognizes the need to reassess the project as sea level rise approaches one foot and formulate appropriate modifications to assure no significant adverse impact on the estuary and reduce project operating costs.</p>
A7	<p>2. The feasibility of the Federal investment is largely based on damages to about 3000 buildings including single family homes, duplexes and non-residential buildings. The dozen or so high rise buildings constructed since about 1978 provide very little in project benefits, and their first</p>

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

**Letter Response
 No.**

floor are above the 100 year flood level. The benefits are based largely on historical flood levels and estimated damages.

We agree the solutions should be based on long term planning compatible with the natural ecosystem, sound land use and public safety. The project was formulated based on a 100 year life and an historical rate of sea level rise of one foot. The plan was formulated recognizing land use plans of others, existing regulations and through the direct coordination of four citizen committees and a technical group. The plan was extensively coordinated and formulated to assure compatibility with the natural ecosystem. This included the design and operation of the gates, the acquisition in fee of the estuary storage area and provisions for its long term management and preservation. Also important is to formulate a plan with a high degree of public safety, which the recommended Regional Plan provides the highest possible degree. In contrast the non-structural plan (Option 2) can not assure public safety and provides very little protection. The local protection plan (Option 1) provided in part a lower level of protection or no protection to some areas, compared to the Regional Plan (Option 3).

A7	3	Federal guidelines required evaluation of structural and non-structural solutions. The non-structural solution did not meet the planning objective, nor the Federal criteria for plan selection due to its low net economic benefits, low level of protection, unacceptability by the public, and inability to provide for public safety.
----	---	---

Revere was provided with the possibility that during design further analysis may show that all or part of the revetments may be replaced by a dune/beach system. Their preference is to eliminate the revetment if possible. Revere also supported other structural features; the flood-gates, walls and dikes.

There is very little undeveloped land surrounding the estuary once the project purchases the estuary storage area. The storage area is nearly 90 percent of the entire undeveloped floodplain in the three towns bordering the estuary. The estuary itself is nearly all bordered by developed properties or roads with very little undeveloped land available for a buffer zone. Project acquisition and management with an environmental enforcement manager will significantly protect the estuary area, compared to without the project. All four communities currently participate in

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

<u>Letter</u>	<u>Response No.</u>	
		the FEMA National Flood Insurance Program.
A7	4.	The Trans Continental property is being planned for development with or without the Regional Plan. See also responses A6(3) and B2(2).
A7	5.	New England Division (NED) will obtain a Massachusetts Coastal Zone Management Consistency Concurrence and a State Water Quality Certification prior to implementing the project. The response to concerns for induced development have been covered above. A thorough compliance review is included in the FEIS, as well as a 404 (b)1 Evaluation. The operation and maintenance of the project is part of the required local assurances. The Executive Office of Environmental Affairs specifically exempted this project from ACEC standards. NED does not foresee this project as a precedent for others.
A7	6.	The floodgate is designed for no significant change to existing flows in the river, and currently provides 500 square feet more cross sectional flow area at mean sea level than the existing natural constriction upstream of the project. Fisheries impacts were fully disclosed and analyzed in the FEIS.
A7	7.	The recreational aspects of this project are fully documented in concert with the MDC Master Plan for the area. Opportunities for Fish and Wildlife Enhancement (both WRDA 1976 and 1986 applications) will be investigated in the Preconstruction, Engineering and Design stage of this project.
A7	8.	These impacts and potential impacts were fully disclosed and evaluated in the D/FEIS (Chapter 8). The project is expected to be reevaluated in the decades before sea level rise reaches a one foot rise. The project has been found to be feasible even if the U.S. National Research Council (NRC) worst-case scenario is realized and the project was abandoned in 35 years or modified.
A7	9.	It is highly likely that it will rise the historical rate of one foot over the 100 year project life, and possibly higher. Whether sea level rise is going to accelerate and how much, will not be known for another 25 years, or so. There is a significant difference in the dikes and walls to be built under Option 1 - Local Protection Plans, as compared to, Option 3's potential modifications around the estuary for sea level rise exceeding one

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

Letter Response
 No.

foot. Option 1 would require walls and dikes built today along almost 9 miles of shorefront at heights reaching 4 to 12 feet. With the Regional Plan no walls or dikes around the estuary may need to be built for 100 years. If sea level rise exceeds one foot before then, the structure's heights would be about 1-2 feet, along only a mile or two. This would accomplish reducing the number of floodgate operations by raising low reaches along the shorefront to keep pace with sea level rise. There are significant differences between the social, economic and environmental impacts associated with Option 1, as described in the report when compared to the Regional Plan Option 3.

The Regional Project has been formulated and will be designed for a one foot rise in sea level, and so that modifications can be made for the worst Case 3. Zoning for a set back from the shorefront is currently being proposed in draft CZM regulations. Even without these regulations, there is sufficient set back around the estuary to construct these low level walls and dikes on uplands, with the exception of one older building. There is every reason to believe the potential project modifications for low walls and dikes on uplands will be possible in the future.

A7 10. The cumulative impacts were fully disclosed and evaluated in the D/FEIS.

A7 11. The mitigation site was selected in an area of disturbed upland fill that was adjacent to similar productive habitat. The success criteria will be physical acreage and benthic productivity. The Division has inhouse expertise to accomplish this effort. The monitoring program is the survey described in the FEIS. Success criterion will be based on comparative productivity to adjacent habitats. The transplant densities have been overestimated to accomodate mortalities. Additional sampling during the initial benthic recruitment processes may be more damaging than the limited scientific data they would yield is worth.

As stated in the D/FEIR and in concert with the plans and cross- sections provided, the hydrologic details are incorporated into the habitat design. The replacement ratio is described in the report as providing the actual acre/value compensation as well as compensation for the productivity lag amortized over the expected project life.

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

<u>Letter</u>	<u>Response No.</u>	
A7	12.	The complete removal of the I-95 fill is not part of this project's required mitigation. The MDC currently intends to use the embankment as a linear park but would entertain partial use for ecological enhancement. It is unknown whether breaching the fill will provide significant additional flushing , or by how much. Route 107 may be the significant constriction.
A7	13.	Extensive design studies will be accomplished to assure optimum and efficient design of the flow through the floodgates to achieve safe passage for navigation and no significant impact on estuary water levels and flushing. This is evident from the proposed model studies and other efforts described in the Design Appendix D. During the completed planning effort and in the absence of these model studies, worse case conditions were largely assumed to assure the project gated flow area (and associated cost) was not underestimated, as described in the Plan Formulation Appendix A.
A7	14.	<p>There is no known significant impact on the MDC state fishing pier as a result of the project. The project, however, would provide better access and parking to the pier. Also as recognized in the report, the affect of the flow around the piers will be further evaluated, and the MDC may request a recreation hazard analysis during design to evaluate the use of the floodgates' walls for public fishing.</p> <p>For this type of project, Hurricane and Storm Damage Reduction, there is no cost sharing for separable recreation features, the cost is 100 percent non-Federal. The project provides for Federal cost sharing of feature which are joint flood protection and recreation such as the park dike. The project provides a high level of coastal flood protection to nearly 400 commercial and recreational vessels moored and for the most part stored in the project area. Through protection of the estuary storage area, vital natural resources needed for fisheries are protected.</p>
A7	15.	The project includes fee acquisition of the estuary storage area.
A7	16.	HEP (not effective for coastal resources) would not provide any additional benefit to the mitigation analysis. The referenced calculation determined acreage created in addition to the direct loss. NED recognizes there are numerous opportunities for environmental restorations in the project area. The project was designed , however, in accordance with

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

**Letter Response
 No.**

Federal and state policies of in-kind mitigation.

The National Economic Development and Ecological Quality resources impacted were quantified and mitigation provided.

A7 !7 Since no new (undisclosed) impacts or project alternatives have surfaced in the D/FEIS reviews, it would be inappropriate to provide additional NEPA documentation. NED fully intends to evaluate environmental enhancement opportunities to the project area in the Pre-construction , Engineering and Design phase.

B1 -- See response to A2.

B2 1. Coordination with Citizen Steering Committees and the Technical Group will continue.

B2 2. There are 3270 acres of flood plain land in the three communities bordering the estuary of which about 1650 acres (50%) would be acquired by the project. In the 100 year and SPN flood plains there are 123 acres (4%) and 237 acres (7%), respectively, of vacant developable land. Much of the vacant land is scheduled and / or under development. Except for the estuary land being acquired by the project, the study area is intensively developed with a low percentage (less than 3 to 6 percent) of the flood plain vacant and developable. As indicative of the intense and ongoing development in the flood plain, the attractiveness of the area, proximity to Boston, recreation opportunities and interest rates are overriding factors in development decisions. The vulnerability of the study area to coastal flooding is already severe.

The project would be designed safe so as not to fail with sea level rise, as all features would have a high factor of safety built into the design. A high degree of confidence in operation and maintenance is required by the sponsors and the Federal Government. Provisions in the Local Cooperation Agreement would assure this confidence. An upfront O & M escrow account to fund O & M has been requested of project sponsors.

B2 3. Acquisition in fee of the estuary storage area along with management plans, required by the project, would protect the estuary area from illegal fill activities and induced development. Beyond the estuary boun-

CORPS RESPONSES TO LETTERS RECEIVED FOLLOWING FINAL REPORT REVIEW (CONTINUED)

Letter Response
 No.

dary, the project would have little development influence on the minimal amount of vacant and developable land.

- | | | |
|----|----|---|
| B2 | 4. | The cost of the \$88.5 million plan to the non-Federal sponsors is \$31.8 million (35.9 percent) which include \$9.2 million in Real Estate (\$6 million to acquire the estuary) and alterations to existing utilities. The project has been estimated conservatively to include nearly \$16 million in contingencies which will be closely managed along with all project features to minimize the final cost. The estuary cost is based on high values and should be lower when acquired, due also to the fact that nearly 200 acres is now owned by the Commonwealth. The potential for significant reductions in costs was identified in the report for several features. These will be scrutinized during design to reduce the cost. |
|----|----|---|

Retrofitting the project for sea level rise would be cost shared with the Federal Government following a cost shared feasibility study.

- | | | |
|----|----|---|
| B2 | 5. | We concur with MCZM that substantial public funds <u>may be</u> requested to protect large areas due to sea level rise and <u>future development</u> . The Federal Government likewise does not encourage development in hazard-prone flood plain areas, nor wish to construct massive projects due to <u>future development</u> and damages caused by sea level rise. Based on surveys following the 1978 flood, it is not too late to avoid high future costs such as this project. Of the 42 communities surveyed for 1978 damages along the Massachusetts coast, excluding the project area, four towns (Hull, Quincy, Scituate and Winthrop) reported between 700 and 1100 buildings damaged (compared to 3400 for the study area) and 20 towns averaged 100 buildings damaged. No buildings were reported damaged for the remaining 14 towns. Avoiding future development in the coastal flood plain would likely reduce future public expenditures for coastal flood protection. |
|----|----|---|

- | | | |
|----|----|--|
| B2 | 6. | The project will be designed so as not to fail with sea level rise, as explained in the report. If policy decisions are made by the state which dictate abandoning the coastal flood plain in 35 years, the project is economically feasible over 35 years, and would provide high protection during a reasonable evacuation period. |
|----|----|--|

- | | | |
|----|----|--|
| B2 | 7. | As stated in the report, "The current project would be designed so that it could be modified for the worst Case 3 sea level rise." |
|----|----|--|

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

<u>Letter</u>	<u>Response No.</u>	
B2	8.	This project is specifically exempted from ACEC consideration by the Commonwealth in its designation. The operation of the floodgate has been evaluated for water quality impacts and optimized to produce negligible changes. All existing and planned storage area discharges have been considered. Antidegradation requirements have been met by avoidance, minimization and compensation. No additional analyses are necessary. We have requested the Commonwealth's view on the project's consistency with the Coastal Zone Management Program and eligibility for Water Quality Certification.
B2	9	Extensive evaluation of mitigation scenarios produced the most viable plan that was implementable. The removal of I-95 fill to increase upper estuary flushing would cause localized flooding in East Saugus. This alternative was considered but eliminated, in part, due to the flooding impact and especially because it is not in-kind compensation for intertidal/subtidal clamflat losses. Technical analyses of flushing constrictions would be required with extensive hydrological investigations as to the extent of constriction of the upper marsh from I-95 fill, and possibly the Route 107 bridges and B & M railroad bridge.
B2	10.	As documented in the EIS/EIR all marshes are completely flooded at a 7.0 foot (NVGD) event. Therefore no reduction in tidal flooding is anticipated. No changes in wetland community species composition is anticipated. The water quality impacts associated with closures are determined to be negligible. The marsh will be purchased to preserve the integrity of the flood storage area.
B2	11.	The significant impacts associated with a Non-structural Plan is the continued vulnerability of the region to the loss of life, health and property. Only a small percentage of property damage would be prevented. The unpredictability of the extent of coastal flooding for evacuation purposes makes this plan extremely unreliable. Public safety cannot be assured. The cost of raising ten miles of major arteries is not economically justified at a cost estimated to exceed \$100 million (in addition to raising bridges, intersecting roads and driveways). Providing safe evacuation shelters does little to protect the residents from flooding.

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

<u>Letter</u>	<u>Response No.</u>	
B3	1.	The preservation of 1650 acres to an elevation 7 contour provides for the land area needed for storage as the water is allowed to rise up to elevation 8. During non-storm conditions which do not threaten to cause damages the estuary water levels would be allowed to rise naturally to El. 8, without closing the gates.
B3	2.	The CLF comment addresses two potential conditions and their effect on sediment input to the marsh, existing conditions and sea level rise conditions. The CLF comment states, "we are very concerned with the likelihood that these closures would significantly reduce the input of sediments to the salt marsh, in spite of their infrequency, and thus cause a reduction in area of salt marsh, even at current sea level" and that storms "are responsible for supplying most of the sediments that allow salt marshes to maintain themselves over time and keep pace with rising sea level."

Sources of material for accretion of the marsh surface consist of peat development, sediment input from creeks and the estuary inlet, upland erosion and runoff, wind driven upland material, and erosion of the marsh face and creeks. It is not clear that storms supply most of the sediment that supply the marsh surface.

The process through which material is supplied for marsh accretion consists of 3 parts: erosion, transport, and deposition. Spring tides and high water levels associated with storms are particularly necessary simply because waterborne sediment cannot be transported to the marsh surface unless the water covers the marsh surface and higher volume tidal events have the capacity to carry greater amounts of sediment. Even with operation of the gates the number of times the entire marsh surface is flooded would increase with sea level rise of up to one foot. Closure with increasing sea level rise beyond one foot would eliminate increasingly greater portions of the tidal cycle, but we continue to recognize the likely need for modifications to the project so that closures return to only 2 to 3 per year following each foot of sea level rise.

The peak flows which transport sediment to the marsh surface will continue under existing sea level conditions for the following reasons. The peak flows, which have the potential to carry the greatest amount of sediment into the estuary, will not be affected by closure of the floodgate. Peak incoming flow occurs at about mid-tide (El. 0, feet NGVD). The floodgates, however, would normally be closed when the tide reaches el-

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

**Letter Response
 No.**

elevation 7 feet (NGVD) and inflow has been naturally reduced in velocity and sediment carrying capacity.

The majority of sediments will already have been carried into the estuary and will be available to the entire marsh surface (as influenced by interior factors) since the entire marsh is flooded when the tides reach elevation 7 feet. Wind and waves, when they occur in conjunction with a storm, will not be affected and will continue to agitate the interior water and disperse sediment. Furthermore, these closures are expected to occur only 2-3 times per year under existing conditions. The majority of coastal storms are not expected to reach 8 feet and would not require closure of the gates. Sediment transport associated with all of these storms and with normal spring tides will continue unaffected. Under both conditions, existing and one foot sea level rise, the gates remain open at least 99 percent of the time. Therefore, we do not expect an impact of the floodgate on marsh accretion under existing sea level condition.

The CLF statement that suspended sediments may pass through the Saugus River channel without deposition until higher in the estuary is understood. We will reassess the environmental importance with sea level rise of sediment sources from outside the estuary to determine the effect of the floodgate structure on salt marsh accretion.

- | | | |
|----|----|--|
| B3 | 3. | The establishment of the intertidal and subtidal flats and transplant of the clams will occur at the beginning of the construction phase. In light of the rapid recolonization rate for benthic species described in the project area, the function and values of the habitat lost would be substantially compensated within the four year construction phase. |
| B3 | 4. | This minor error does not change the context of the discussion. |
| B3 | 5. | See EOEa Certificate on this point. |
| B3 | 6. | See responses to Letter B2 comments 2 and 5. The project would protect the most concentrated area of damages and which is regionally significant to Massachusetts. |
| B4 | 1. | The objective of the study was to provide a high level of flood protection to the communities, as well as minimizing significant impact on the tide levels, flushing, water quality and biology of the estuary. With SWIM's assistance and other members of the Technical Group, as well as the |

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

Letter Response
 No.

Citizens Steering Committees these objectives and goals were considered and evaluated very closely during the formulation of the Regional Plan. As you know many changes resulted in the initial conceptual plan to meet these objectives, including: increasing the gated opening at mid tide from about 2500 to 8800 square feet; widening the flushing gates from ten to fifty feet; requiring rounded edges on all gates; lowering the flushing gates to the river bottom; operating the gates to assure estuary levels would continue to inundate even the high marsh when gates are closed; and especially, purchasing and managing the estuary to protect it from illegal filling and loss of storage; among other changes.

The design effort will have similar criteria and public coordination. The benefit-to-cost ratio is conservative, recognizing the contingencies may include opportunities for cost savings, and that not all direct benefits have been accounted for by the project, nor have indirect benefits been included for flood control.

- | | | |
|----|----|---|
| B4 | 2. | The project has been formulated for flood control based on Federal policy for sea level rise. Environmental and public protection have both been major objectives formulated into the project. Purchase in fee (rather than easements) of the estuary area will take several years and is scheduled to start at the beginning of construction, at least a year ahead of the floodgates and be completed prior to completion of the project. |
| B5 | 1. | Acquisition in fee of the estimated 1650 acre estuary storage area is a project feature, and a real estate plan for acquiring the area will be developed during design. |
| B5 | 2. | The referenced discussion refers to a scenario of gate closures that exceeds the anticipated modified project operation criteria. The discussion was included to substantiate likely operational restrictions placed on the gate closures after sea level rise modifications are imposed to not exceed the 35-45 events per year. |

Limiting closures to about 40 per year would continue to assure the gates are open 99 percent of the time and only closed for short durations to assure no significant impact on the estuary. If there is reason to believe impacts are occurring prior to reaching 40 closures, there is nothing to prevent either the sponsor or Federal Government from re-

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

**Letter Response
 No.**

questing a reevaluation study of the authorized project and its operation. With sea level rise, the existing Phragmites bordering the estuary will eventually disappear even with the project as these areas are inundated with salt water more frequently.

- B5 3. With accelerated rates of sea level rise, if they occur, the Corps would participate in an investigation with the sponsors and public to evaluate the proper modification to the project to assure a high level of flood protection and protection for the environment. It is highly unlikely that closures would significantly exceed 40 per year due to the impacts already identified for a rise of 2 or more feet, including both environmental and increased operating costs. The likely outcome of an investigation to modify the project for sea level rise is expedited to limit closures to about 40 per year.

The local operation of the floodgates will be a major issue addressed during design. Not only will the Corps involvement in the training of operators and semi-annual inspections be addressed, but also the requirement of sponsors and the Executive Office of Environmental Affairs (EOEA) Certificate for a comprehensive management document.

- B5 4. The communities have implemented FEMA requirements in the flood plains; however, they have no more control than other communities in preventing development on private lands. The communities should not be penalized for lack of Federal or state regulations forbidding construction in the flood plains. Contribution by communities will be developed during the design phase. Substantial benefits affect the well-being of others and the economy well beyond the limits of the study area, including: state facilities, regional arteries and utilities, regional recreation and education facilities, estuary resources and thousand of businesses. Therefore, it would be inequitable to expect the communities to finance 100 percent of the non-Federal cost without state assistance.

- B5 5. There are only a limited number of vacant developable parcels which border the marsh. Purchasing and managing the estuary storage area will provide the highest possible protection against illegal filling and development of the estuary.

- B5 6. Benefits and costs have been conservatively estimated and thoroughly reviewed by the Washington Level Review Center to assure the benefits

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

Letter **Comment**
 No.

are reasonable and that the project is a good investment for the Federal Government. Routes 1, 16, and 99 are closer routes to Boston than 128; however, to reach these routes from Lynn by over 50,000 vehicles (displaced from Routes 1A and 107 alone) through largely unfamiliar back streets of Saugus is unlikely due to the accessibility of 128. Nevertheless, the only benefits estimated for assuming 128 would be used was simply the savings in the additional vehicle operation cost, which totalled less than 0.5 percent of project benefits.

- | | | |
|----|----|--|
| B5 | 7. | See response to Letter B2, cmt. 11. |
| B5 | 8. | See response to Letters B2, cmt. 5 and B4 cmt. 2. |
| B6 | 1. | The methodology and analysis for constructing the South Harbor dikes landward along the toe of the bulkhead has been approved, and is therefore the recommended alignment. The option to relocate a wall 300 feet inland was deleted from the main report. |
| B7 | -- | No response required. |
| B8 | 1. | The EIS/EIR does not conclude that the floodgate plan will "result in no significant environmental impacts to marine resources." Unavoidable significant environmental impacts and risks are fully disclosed and minimized/compensated where practicable. |
| B8 | 2. | Concern for potential impacts to planktonic eggs and larvae have resulted in the inclusion of rounded structural corners as a design mitigation to minimize potential impacts and larger gates have been recommended. No substantial changes are anticipated in the upper estuary. Increased floodgate operations will not be allowed above the design criteria. A retrofit analysis will be performed in lieu of incurring additional environmental impacts from increases in sea level rise. |
| B9 | 1. | The required ponding area lies between North Shore Road and Revere Beach, and runs from the old narrow gage railroad embankment (where it borders the South end of the ponding area) to near Carey Circle at the north end of Revere Beach. This ponding area is included in the acquisition plan. |
| B9 | 2. | At Point of Pines the recommended plan only requires temporary and |

CORPS RESPONSES TO LETTERS RECEIVED FOLLOWING FINAL REPORT REVIEW (CONTINUED)

Letter Response
 No.

permanent easements for the construction and maintenance of the shorefront structures to be built as part of the project. Public access and possibly use of the beach would only be required, if the plan is changed during design to require the beach to be enlarged for flood protection, in lieu of the revetments. This does not apply if the revetments are removed under the dunes (along the northern half of the shorefront) and only the dunes are built up. This is a possibility following the analysis with the dune/beach model in design.

If, however, at the southern reach a beach/dune system in lieu of revetment proves to be technically and economically feasible and more acceptable from Carey Circle to about Alden Avenue, then public access would likely be required on the built up beach. However, based on preliminary estimates, it does not appear a beach/dune system at this southern location would be economically feasible due to the tremendous amount of sand and cost required to build a beach and dune system. The analysis of the dune/beach systems for both the southern and northern reaches of the shorefront will be closely coordinated with the sponsors, including Point of Pines.

- | | | |
|----|----|---|
| B9 | 3. | The floodgate wall has been moved closer to the pumping station to facilitate construction and reduce the impact on the beach. The final alignment will be reviewed during design based on foundation conditions, modeling of the gates and flow regime, alignment of the outlet pipe extension and any effects on the marina. |
| B9 | 4. | See response # 2. |
| B9 | 5. | No additional wall structures are scheduled to be considered during design. Only the walls discussed with the residents at workshops are scheduled to be raised a few feet from the end of the floodgate to/and including the pre-cast and cast-in-place walls along the Saugus River to near the east end of Wadsworth Avenue. |
| B9 | 6. | The boardwalks or cross-overs of the dunes, revetments and walls, as well as replenishment of dune grass are project features. Landscaping has been included and will be further coordinated during design |
| B9 | 7. | The project is scheduled to be constructed during normal day time working hours to assure minimum impacts on Point of Pines residents De- |

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

<u>Letter</u>	<u>Response</u> <u>No.</u>	
		tails will be coordinated during project design.
B9	8.	Dredging and concrete lining of the Eastern County Ditch for proper drainage <u>is not</u> a project feature. Interior drainage which is not adversely affected by the project is a non-Federal responsibility, and is not included in the scope of the study.
B9	9.	The determination to eliminate or change flood insurance would be made by FEMA following completion of the project. Changes are anticipated due to significant lowering of the base flood elevations.
B9	10.	Travel routes and public safety will be coordinated during design.
B9	11.	Coordination, notices and an accessible line of communication as requested will be accomplished during all project phases.
B9	12.	The limits of the wetlands bordering the storage area will be clearly delineated on maps, and boundary markers included for the acquired estuary storage area.
B9	13.	The comprehensive management plan to be developed in design and the local assurance will define the protective measures and procedures for the estuary storage area.
B9	14.	The Corps will perform semi-annual inspection to assure proper maintenance and operation of the project. Operating and regulating procedures and manuals will be prepared, and adherence will be part of the local assurances.
B9	15.	The inclusion of funds in an escrow account for operation and maintenance has been requested throughout the study by the sponsor and is preferred by the MDC and Corps. The details will need to be worked out in design.
B10	--	See responses to Letter B9.
B11	--	The Citizen Steering Committees will continue during design and construction of the project with representation from the Point of Pines Yacht Club. See also response #3 to Letter B9.

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

**Letter Response
 No.**

tails will be coordinated during project design.

- | | | |
|-----|-----|--|
| B9 | 8. | Dredging and concrete lining of the Eastern County Ditch for proper drainage <u>is not</u> a project feature. Interior drainage which is not adversely affected by the project is a non-Federal responsibility, and is not included in the scope of the study. |
| B9 | 9. | The determination to eliminate or change flood insurance would be made by FEMA following completion of the project. Changes are anticipated due to significant lowering of the base flood elevations. |
| B9 | 10. | Travel routes and public safety will be coordinated during design. |
| B9 | 11. | Coordination, notices and an accessible line of communication as requested will be accomplished during all project phases. |
| B9 | 12. | The limits of the wetlands bordering the storage area will be clearly delineated on maps, and boundary markers included for the acquired estuary storage area. |
| B9 | 13. | The comprehensive management plan to be developed in design and the local assurance will define the protective measures and procedures for the estuary storage area. |
| B9 | 14. | The Corps will perform semi-annual inspection to assure proper maintenance and operation of the project. Operating and regulating procedures and manuals will be prepared, and adherence will be part of the local assurances. |
| B9 | 15. | The inclusion of funds in an escrow account for operation and maintenance has been requested throughout the study by the sponsor and is preferred by the MDC and Corps. The details will need to be worked out in design. |
| B10 | -- | See responses to Letter B9. |
| B11 | -- | The Citizen Steering Committees will continue during design and construction of the project with representation from the Point of Pines Yacht Club. See also response #3 to Letter B9. |

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

**Letter Response
 No.**

- | | | |
|-----|----|---|
| B12 | 1. | <p>Examination of Options
 Reference Main Report - Section 1 page 95:
 "In order to initiate project modifications for sea level rise, the Federal sponsor would need to request the Corps to conduct an investigation under the Corps Section 216 authority for modifications to authorized projects. A reconnaissance study would be accomplished, followed by (if approved by the Corps and sponsors) a cost shared feasibility study. The modifications recommended by the study would also be cost shared. The current project would be designed so that it could be modified for the worst Case 3 sea level rise."</p> |
| B12 | 2. | <p>Maintenance and Operation
 Reference: page 109 Main Report</p> <ul style="list-style-type: none"> • The Corps would prepare and provide an O & M manual. • The Corps and sponsor would inspect and operate the project features semi-annually to assure proper O & M (pg. 93, MR). • The O & M costs and responsibilities will be developed in detail over the 4 year design period for developing the LCA, project costs and responsibilities. • The design phase includes a Real Estate planning report describing the parcels (taking lines) to be acquired. (Appendix J, Section B, page B-1). • The O & M cost includes \$55,000 for an Environmental Manager. (Appendix J, Section B, pgs. D-1 & 4). |
| B12 | 3. | <p>Visual Impacts/Responsibility
 The Point of Pines plans for walkways, fencing, dune replenishment and other measures are described in the Main Report pages 72 to 74. Plans and sections are provided in Appendix D. The plans will be developed in detail in coordination with the sponsors during design. The design height of the floodgate gravity wall adjacent to Point of Pines is about 2 to 2.5 feet higher than the existing Rice Avenue wall (MR. pg. 72). Workshops with Point of Pines residents provided brochures, slides, graphic displays, and discussion of the impacts of the project. Main reports were provided to the P. O. P. Board of Trustees. There was no significant concern as to the height of the floodgates and raised walls. Residents requested the walls along Rice Ave. not be lowered since it helps keep the sand and water off the road.</p> |

**CORPS RESPONSES TO LETTERS
RECEIVED FOLLOWING FINAL REPORT REVIEW
(CONTINUED)**

Letter Response
 No.

B12 4. Corrections
 Page 66 of the EIS/EIR identifies Future Without Project Conditions and indicates the potential loss of intertidal habitat from the construction of the Town Line and Linden Brook Flood Control project. This project includes raising the MDC dike bordering the estuary. If the dike were raised (which is not required with the Regional Project), it would likely impact on the wetlands.
 Page 71 of the FEIR, paragraph 6.106 should be corrected to "Route 95", not "Route 93".

B12 5. General Issue
 The estuary floodplain will be acquired in fee, in lieu of easements, which is reflected in revised pages to the report. Operation and maintenance requirements include a full time person to monitor the estuary area's flood plain. The LCA requires sponsoring communities to comply with applicable Federal flood plain management and insurance programs.
 Delineation of responsibilities would be more clearly defined for O & M and cost sharing during the design stage with the sponsors.

NOTE: Letters C1, 3-8, 10 and 12 (attachment) are duplicate letters with responses previously provided.

C2 -- No response required.

C9 -- No response required.

C11 1. Agree, the surest and soundest way to protect the estuary storage area is through management and acquisition in fee (purchase) which are project features. The management measures will be coordinated during design to accommodate the varying interests.

SECTION A
STATE AND FEDERAL AGENCY REVIEW COMMENTS



**The Commonwealth of Massachusetts
Metropolitan District Commission
M. Ilyas Bhatti, Commissioner**

**20 Somerset Street
Boston, MA 02108
617-727-5114**

March 5, 1990

**The
Metropolitan Network
of Services**

Colonel Daniel M. Wilson

Division Engineer

Parks

U.S. Army Corps of Engineers

New England Division

Beeches

424 Trapelo Road

Waltham, Massachusetts 02254-9149

Community Boating

Dear Colonel Wilson:

Historic Sites

Recreational Facilities

Public Concerts

Trailside Museum

Boston Harbor Islands

Metropolitan Police

Flood Control

Watershed Management

Pure Water Supply

**Quabbin, Wachusett and
Sudbury Reservoirs**

**Franklin Park and
Stone Memorial
Zoos**

**Parkway, Boulevard and
Bridge System**

**Charles Mystic and
Neponset Rivers**

**Beaver Brook, Blue Hills,
Elm Bank, Breakheart,
Middlesex Fells and
Stony Brook Reservations**

I am writing to express the Metropolitan District Commission's support as the Commonwealth's designated local sponsor for the Flood Damage Reduction Project, Saugus River and Tributaries, Lynn, Malden, Revere and Saugus; the detail of which are contained in previous studies and final reports dated December, 1989 and furnished to this Agency. This project would provide a high level of coastal flood protection to the 5000 buildings and the 400,000 residents, employees and commuters in this region which is frequently threatened and flooded from tidal storms. The project would also protect major industries, utilities, transportation arteries, recreational facilities, a valuable salt water estuary, navigation fleet and other resources important to Boston and the north shore.

We have also reviewed the preliminary draft of the Local Cooperation Agreement dated February 28, 1990, and intend to sign the agreement concurrent with the communities for those non-monetary items not within the direct control of the MDC.

We understand that a final Local Cooperation Agreement will be required after the Report is approved by the Chief of Engineers, the project is authorized by the U.S. Congress, and after the completion of plans and specifications, which should take approximately four years. At that time, a final estimate of project costs and cost sharing amounts will be prepared. The MDC will request funds from the Legislature to meet the State's cost share for both the first cost and O&M. Construction is currently scheduled to start in Fiscal Year 1994.

As the State's local sponsor we would be required to provide cash contribution estimated at \$22,600,000 which includes 100% of the cost of the extra park embankment (\$600,000) needed for relocation. We must also provide the real estate and relocation requirements estimated at \$9,200,000 for

AI,

MetroParks

MetroParkways

MetroPolice

PureWater

Colonel D. Wilson


-2-

March 5, 1990

1650 acres of estuary, 9 acres of MDC park dike, 6.5 acres of I-95 for mitigation and easements for other project features. Additionally, a preliminary estimate of \$230,000 per year operation and maintenance cost would be a continuing non-Federal responsibility following completion of the project.

I am looking forward to working with you on this critically needed project.

Sincerely,



M. Ilyas Bhatti, P.E.
Commissioner

PJD/eg

cc: N. Baratta
F. Faucher
C. Terzian
A. Jewett

A/2



THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

February 23, 1990

MICHAEL S. DUKAKIS
GOVERNOR

JOHN DeVILLARS
SECRETARY

Kenneth H. Murdock
Department of the Army
Water Resources Support Center
Corps of Engineers
Casey Building
Fort Belvoir, VA 22060-5586

Re: Flood Damage Reduction Study, Saugus


Dear Mr. Murdock:

You have written Governor Dukakis requesting comment from the Commonwealth of Massachusetts on the Report of the Chief of Engineers on Saugus River and Tributaries and the final environmental impact statement.

On February 20, 1990, I issued a Certificate on the Final Environmental Impact Report submitted for this project pursuant to the Massachusetts Environmental Policy Act. I have enclosed a copy of that Certificate, which contains my substantive comments on the report to which you refer.

If you have further questions about this matter, please contact Janet McCabe of my staff. She can be reached at 617-727-5830, ext. 300.

Sincerely,


John DeVillars, Secretary
Environmental Affairs

enc.
JD/JGM/jgm

A2,



THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

February 20, 1990

MICHAEL S. DUKAKIS
GOVERNOR

JOHN DEVILLARS
SECRETARY

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS
ON THE
FINAL ENVIRONMENTAL IMPACT REPORT

PROJECT NAME : Flood Damage Reduction Study
PROJECT LOCATION : Lynn, Malden, Revere and Saugus
EOEA NUMBER : 6497
PROJECT PROPONENT : U.S. Army, Corps of Engineers
DATE NOTICED IN MONITOR : January 20, 1990

The Secretary of Environmental Affairs herein issues a statement that the Final Environmental Impact Report submitted on the above project adequately and properly complies with the Massachusetts Environmental Policy Act (G.L., c.30, s61-62H) and with its implementing regulations (301 CMR 11.00).

The comment letters from state agencies who have a major role in the implementation of this project indicate a continuing significant difference in philosophy from the Corps of Engineers, co-proponents with the state, regarding the advisability of this project as it relates to new development along the state's coastline and protection of development already in place. My office has designated the Metropolitan District Commission as lead state agency for flood control efforts for the Saugus River Estuary, and the Coastal Zone Management Office must find consistency in both the state and federal actions to that end. The larger question is whether this project represents sound policy and is one for which state funds should be expended.

However, the question of the moment is whether the Final EIR has presented an analysis sufficient to describe the potential environmental impacts of the project if it is pursued and if sufficient mitigation has been presented to allow all state agencies to either avoid or minimize those impacts. It is to this question that I will address the current Certificate. The decision as to whether this project represents an appropriate expenditure of public funds at this time is one which I and the relevant agencies within my Secretariat will resolve in the near term.

Among the important issues and requests contained in the

comment letters are: the viability of the marsh, the role of major storms in the sediment budget of the marsh, the ability to retrofit the proposed structures in the event of a 3 to 4 foot sea level rise, the effectiveness of flood proofing and evacuation, the responsibility of the facility manager, the lack of a Draft Section 61 finding, the role of the communities in the management of the area, final cost sharing responsibilities, land acquisition responsibilities, requests for preparation of a generic environmental impact report and a request for major and complicated designation under the MEPA regulations. These issues are addressed individually below. It is my conclusion that they have been sufficiently addressed to allow the decisions to be made as required by law.

MARSH VITALITY - Several commentators suggest that by stopping the peak of flooding events, the marsh complex would shift in composition and boundary. It should be noted that all marshes have been identified as existing below elevation 7. The proposed operation of the tide/storm barriers calls for closure of the barrier when the tide event has reached elevation 7, when all marsh would be inundated. At that time the Saugus River would continue to flow and most of the tributary land area not blocked by tide gates would continue to drain as well. Thus the water level behind the barrier will peak at levels above elevation 7. In addition, wind action within the estuary will continue to act on the water body to create internal circulation and tend to decrease salinity gradients as at present. Since no significant changes in tidal exchange, or low or mid tide levels are anticipated with the main gate and the "tainter" gates, I agree with the EIR conclusions that mitigation has been included to minimize the potential marsh impacts of the storm barrier.

MARSH BUILD-UP - Commentors have suggested that storm event sediment transport will be crucial to the survival of the salt marsh with sea level rise. It should be noted that the estuary is located behind a barrier beach which would be expected to contribute significant quantities of sand (sediments) during future storm events with sea level rise if it were not heavily developed and protected by structures at this time. The combination of these two factors limits the quantity of sand which would occur as a result of overwashes. The second major source of sediments are those from the river system. These are not changed by the barrier, or may be enhanced slightly as the flow gradient may continue longer into the basin behind the barrier. The last source of sediments is from reversals in river flow. Sediments delivered to the mouth of the river can move some distance upstream. In the case of the Saugus River, the

protection of Nahant and its causeway limit the ability of storms to deliver sediments to the river mouth. Only storms from the Southeast are significant in moving sands from the River beach to the river mouth. With the gates open until the storm surge reaches 7 feet, a significant period of sediment transport is preserved. Only long term monitoring of marshes will determine if they can adjust to sea level changes as they occur. This EIR is not the place to require such basic research.

WETLAND MITIGATION - Commentors have identified the state policy as requiring greater than one for one compensation for loss of wetland resource areas. I concur with that information and conclude that enough information is contained in the DEIR and FEIR for the appropriate state agencies to require the needed mitigation. The DEIR identified greater areas for mitigation as the amount of area thought to be altered was much greater. I conclude that the state regulatory programs can require the needed mitigation as they evaluate the project for the needed variances. There is a provision in the Wetland Protection Act to allow the DEP to rule on wetland alteration projects prior to the conservation commissions when the project involves more than one community. That process appears appropriate in this instance.

FACILITY CHANGES DUE TO SEA LEVEL RISE - The EIR has stated that the structures will be designed so that sea level changes up to 3 or 4 feet can be accommodated if future study determines that such changes are desirable, feasible and environmentally acceptable. A request by the state sponsor for the Corps to conduct an investigation under the Corps Section 216 authority for modifications to authorized projects would initiate the study. The capability to respond to sea level rise has been requested by state agencies.

EVACUATION/FLOODPROOFING - Comments indicate that many feel that evacuation and floodproofing are viable options and must be used to avoid any of the identified impacts to the environment. I am persuaded by the evidence in the EIR that flooding events in this particular estuary are difficult to predict in time to allow orderly evacuation. Study has indicated that combinations of events during the storm are in many cases crucial to the decision making and many false emergencies would have to be declared under the existing conditions. This information will be further reviewed as the state decides whether to endorse and participate in the recommended project.

FACILITY MANAGEMENT - The Corps of Engineers has determined that it can not manage the proposed facility and that

the state proponent would be the likely manager. Assuming that the determination is made to proceed with this project, I agree that this is acceptable and that the management agency must be responsible for both operation and maintenance of all facilities and that the agency must also take an aggressive stance in following all proposed development in the flood storage area and the adjacent floodplain. The basin will operate as in inland flood storage areas after construction of a flood barrier and any loss of flood storage capacity will be significant and must be, under the Wetlands Protection Act, compensated. The manager will be aggrieved under any Order of Conditions which does not protect the flood storage, and must therefore appeal the decision to the state. I will, through the MEPA Unit, make sure that all projects requiring MEPA review are consistent with this requirement. The ACEC status of the estuary will bring most proposed alterations within the estuary under MEPA review. A further responsibility of management will be to bring to the attention to appropriate local, state and federal agencies, any flood plain activity which has not been seen through the permitting process. I expect that a comprehensive management document determining local, state and federal responsibilities will be developed prior to any construction, and I encourage all interested parties to follow its development. The Environmental Monitor can serve as a vehicle to publicize developments.

STATE/LOCAL FUNDING - Once the environmental review is completed it is time to work out the split in responsibility between the state and the local communities who benefit from the flood protection. I fully expect this to be resolved prior to state commitment to the program.

ACQUISITION OF FLOOD STORAGE LANDS - Comments have suggested that the land acquisition may not occur. It is my position that the land acquisition is now a part of the program and that it must occur. If that fact should change, the environmental review of the project would be reopened in response to notification of project change.

SECTION 61 FINDINGS - The most serious issue raised is the lack of Draft Section 61 findings in the document as required by the scope and again in the Certificate on the DEIR. I am disappointed that the draft is not included, but conclude that its absence is not fatal as several summaries of impacts and mitigation are included. These include Table 5.1 of Section 2, Table 1 following page EIS-2 of Section 2 and the last pages of Appendix K. I should note that some of the conclusions as to potential impact are given after redesign to minimize impacts and

the Section 61 Findings should so indicate. My call for a Draft finding in the EIR was to assist all state agencies in carrying out their mandated responsibilities. In lieu of the Draft in the EIR, I ask that the state sponsor prepare a Draft finding which I will publish in the Environmental Monitor for comments from the public.

GEIR/MC STATUS - Finally I have been asked by state agencies and others to consider requiring that a Generic Environmental Impact Report on flood control all along the state coastline in response to sea level be required prior to any state decision to participate in this project. I have also been asked to invoke Major and Complicated status under the MEPA Act, presumably so I can require a further series of reports prior to completion of the environmental review for this project. First, both of these decisions are properly made when the ENF is filed, not at the review of a FEIR. I do not find that the conditions in the Saugus River Estuary are typical of our coastline. It may be desirable to review the state response to flooding forecasts over the next 30 to 100 years but I do not think this project is the proper vehicle for that review. Major and Complicated status is reserved for projects where a long series of decisions must be made as it allows incremental approval of a project. The decision to be made for this project is whether it should go forward, and if so, what mitigation is necessary. I conclude that the normal EIR process is appropriate.

February 20, 1990
Date



John DeVillars, Secretary

Comments received : MCZM - 2/12/90
CLF - 2/9/90
SWIM - 2/5/90
MACC - 2/6/90
Lynn Planning Board - 2/6/90
SAVE - 1/25/90
DMF - 2/6/90
Revere City Council - 2/2/90
Mayor of Revere - 1/25/90
Point of Pines YC - 1/23/90
MDC - 2/9/90

JD/DES/ds



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

March 12, 1990

**Colonel Daniel M. Wilson,
Division Engineer
New England Division
U.S. Army Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02254-9149**

RE: F-COE-B36065-MA

Dear Colonel Wilson;

In accordance with Section 309 of the Clean Air Act (CAA), the National Environmental Policy Act (NEPA), and Section 404 of the Clean Water Act (CWA), we have reviewed the Final Environmental Impact Statement (Final EIS) for the "Saugus River and Tributaries Flood Damage Reduction Study" located in Lynn, Malden, Revere and Saugus, Massachusetts.

We commend the Corps for initiating changes to the project that significantly reduce impacts to intertidal habitat and intertidal flats (i.e., redesign of the proposed Lynn Harbor shorefront protection component so that the dikes will be built inland of the toe of the bulkhead or shorefront, and revision of the actual floodgate structure so that the dike will now be a gravity wall). The Regional Floodgate Plan (Option 3) as now proposed reduces aquatic habitat impacts to the loss of two acres of intertidal area and one acre of subtidal area. These unavoidable impacts are associated with the placement of fill (or structure) for the flood barrier, revetments and the dredging surrounding the proposed flood gates.

One significant concern about the Regional Floodgate Plan is whether it is consistent with the Coastal Zone Management Plan and state water quality certification regulations. The designation of the marsh estuary as an Area of Critical Environmental Concern (ACEC), the proposed upgrading of the water quality classification of the Saugus River to "Class SA", and designation of the waters as "Outstanding Resource Waters" (as addressed on page EIS-48) will result in not only stricter protection of existing uses but protection of water quality. Strict interpretation of the antidegradation provisions of the state's water quality standards could dictate that no discharges would be allowed within the defined outstanding resource waters, with the construction of the floodgate being considered a discharge. As you know the displacement of intertidal mudflats and subtidal area could also be considered an elimination of existing uses.

Second, increasing the frequency of closures of the floodgate due to sea level rise could be detrimental to the salt marsh and estuary (an anticipated 40 closures of the proposed floodgate per year if sea level rises by one foot and 500 closures per year if sea level rises four feet). We recommend that the Corps' intent to investigate and reassess the flood reduction plan when a sea level rise of one foot in elevation is achieved be a commitment in the Record of Decision. We believe such a re-evaluation of operational impacts in the future when more definitive information is available regarding sea level rise is an appropriate response to this issue. However, since one course of action to respond to sea level rise without more frequent closure of the flood gate structure is construction of berms, dikes, or walls along the upland edge of the marsh, we recommend that the Corps consider future upland needs for these berms now as they map wetland boundaries and flood event elevations so that future construction, if needed, will not occur within the marsh itself.


Third, the Corps proposes to mitigate the unavoidable impacts by removing a small portion of the abandoned Interstate 95 fill near the Pines River with the goal to create one acre of new subtidal area, two acres of new intertidal area, and a half acre of salt marsh. Soft shell clams are proposed to be transplanted from adjacent areas to the newly excavated intertidal and subtidal areas. While the Corps believes that this 1:1 acreage ratio of replacement is adequate, EPA is less certain about the potential success of clam flat creation and believes that a larger acreage of habitat may be required to achieve equivalent compensation of the values lost. We request information regarding examples of successful clam flat creation that the Corps may have conducted. Further, as stated in our August 14, 1989 letter, EPA believes additional consideration of restoring hydrologically restricted marshes as part of the mitigation plan is warranted. As you know, the February 6, 1990 Memorandum of Agreement between EPA and the Corps on mitigation under the Clean Water Act Section 404(b)(1) Guidelines cites restoration of existing degraded wetlands as a compensatory mitigation action. We recommend that an incremental analysis of mitigation opportunities be conducted to explore both alternative and additional compensatory mitigation projects in the estuary which might achieve far greater value compensation than the current proposal. We offer our assistance in working with the Corps and other resource agencies to develop and assess project mitigation opportunities in the marsh estuary.

Finally, EPA is concerned that the maintenance of the current hydrological restriction to 444 acres of marsh and former marsh land (1) will not coincide with the goal of the Clean Water Act to restore and maintain the integrity of the waters of the United States, (2) will not be compatible with the intent of the ACEC designation of Rumney Marsh, (3) and will not be consistent with EPA's longstanding environmental goal of restoring this area. The flood reduction plan's requirement for local assurance that all

existing tidegates be maintained in operating order does not allow for the potential restoration of salt marsh through the use of self-regulating tidegates, which would automatically close when the tide reaches a pre-determined high elevation, or other means. We are also concerned that the Corps insists that the abandoned Interstate 95 fill can never be fully removed from the marsh, and that the hydrological restriction caused by the I-95 fill cannot be removed. The basis for the Corps insistence of retention of a minimum 15 foot high (NGVD) dike in place of the I-95 fill is that certain areas received unintended flood protection from the I-95 fill. According to the Final EIS, the complete removal of the I-95 fill would, even with the Regional Floodgate Project, cause flooding at normal high tides. We are not convinced that alternative means to protect these areas are not feasible, and environmentally preferable, to the retention of the I-95 hydrological restriction.

Thank you for the opportunity to review and comment on the Final EIS. Please contact Donald O. Cooke of this office at (617) 565-3414, if you have any questions relative to our comments. We would appreciate receiving a copy of your Record of Decision (ROD) when it becomes available.

Sincerely,



Elizabeth Higgins Congram, Assistant Director
for Environmental Review
Office of Government Relations and
Environmental Review (RGR-2203)

cc: Lt. Colonel Stanley J. Murphy, NED COE
Robert G. Hunt, Project Manager, NED COE
William A. Hubbard, Impact Analysis Branch, NED COE
William F. Lawless, Chief Regulatory Branch, NED COE
Vern Lang, US FWS
Ralph Abele, US FWS
Janet McCabe, Director, MEPA
Dave Shepardson, MEPA
Daniel Greenbaum, Commissioner, MA DEP
Jeff Benoit, Director, MA CZM

A3,



February 26, 1990

Director
Washington Level Review Center
Department of the Army
Corps of Engineers
Casey Building
Fort Belvoir, VA 22060-5586

Re: Flood Damage Reduction, Saugus River and Tributaries, Lynn, Malden,
Revere and Saugus, Massachusetts Reference: CWIS No. 14021

Dear Director:

Staff of the MHC have reviewed the final report entitled Water Resources Investigation-Feasibility Report and Final Environmental Impact Statement and Environmental Impact Report, Saugus River and Tributaries, Flood Damage Reduction Study, Lynn, Malden, Revere and Saugus, Massachusetts, which was prepared by the Corps of Engineers, New England Division.

MHC feels that the highly dynamic nature of the study area would have compromised the integrity of most prehistoric archaeological sites within the project area. Both the effects of coastal wave action and changes in the meandering of the Saugus River would have impacted much of the area and limited the likelihood that prehistoric archaeological deposits would remain intact. MHC expects that any significant prehistoric archaeological sites in the project area would be located in areas which were subject to rapid burial through catastrophic inundation. While the possibility of dry-land sites being buried under marsh-land vegetation in the project area does exist, MHC feels that the likelihood of the structural alternatives having an impact on such a site are very low.

MHC concurs with the findings in the EIS that the non-structural alternatives will have no effect on significant historical or archaeological resources. MHC also feels that the structural alternatives are unlikely to affect any significant historical or archaeological resources.

These comments are offered in order to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800). If you have any questions, please feel free to contact Peter Mills or Brona Simon at this office.

Sincerely,

Brona Simon DSHPO
Valerie A. Talmage
Executive Director
State Historic Preservation Officer
Massachusetts Historical Commission

xc: Marie Bourassa, ACE

U.S. Department
of Transportation

United States
Coast Guard



Commandant
United States Coast Guard

Washington, D.C. 20593-0001
Staff Symbol: G-MPS-1
Phone: (202) 267-0504

16600
12 FEB 1990

Mr. Kenneth H. Murdock
Director
Washington Level Review Center
ATTN: CEWRC-WLR-I
Kingman Building
Fort Belvoir, VA 22060-5576

Dear Mr. Murdock:

This is in response to your letter of January 17, 1990, in which you transmitted four copies of the proposed report of the Chief of Engineers on Saugus River and Tributaries, Massachusetts, the report of the division engineer and a final environmental impact statement (FEIS). We have reviewed the reports and FEIS and have no comments to offer.

Thank you for providing the opportunity for review of the Saugus River reports and FEIS.

Sincerely,

E. P. PARMENTIER
Commander, U.S. Coast Guard
Chief, Port Operations Branch
Port Safety and Security Branch
By direction of the Commandant

A5



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240



MAR 20 1990

ER 90/54

Mr. Kenneth H. Murdock
Director, Washington Level Review Center
ATTN: CEWRC-WLR-I
Kingman Building
Fort Belvoir, Virginia 22060-5576

Dear Mr. Murdock:

The Department of the Interior has reviewed the Chief of Engineers proposed report, other pertinent reports, and final environmental statement for Saugus River and Tributaries, Massachusetts. We have the following comments and recommendations.

We find the feasibility report and final environmental impact statement considerably improved from the draft documents. The Corps of Engineers has made several substantial project modifications which would significantly reduce project impacts on fish and wildlife resources of national concern. These modifications include eliminating intertidal filling for the Lynn Harbor dikes and acquisition of the estuarine storage area to insure its integrity. More detailed analyses of non-structural solutions and sea-level rise have also been provided.

However, the potential for significant long-term impacts to the Saugus River estuary from operation of the regional floodgate plan continues to be a serious concern. Our concerns with long-term ecological impacts and conflicts with Federal conservation mandates have been outlined in previous coordination and comments on the project, including the final Fish and Wildlife Coordination Act Report dated May 4, 1989, comments on the draft feasibility report dated July 21, 1989, and the Department of Interior August 4, 1989, comments on the draft feasibility report/draft environmental impact statement.

The floodgate may impact fish and other estuary-dependent resources that would have to pass through the structure. The ten flushing gates currently proposed would be the minimum necessary for fish passage and estuary flushing. The Corps indicates this number may be reduced if the size of the navigation gate is increased. Clearly, the ultimate level of biological impact remains unknown.

The most significant unresolved environmental issue is the potential for long-term impacts on the estuarine ecosystem. Future project-induced changes in estuary dynamics may range from minor to highly significant, depending on future rates of sea-level rise.

AG,

1

2

As noted in the Corp analysis of sea level rise, potential adverse impacts from an increasing frequency of floodgate operation would include reductions in marsh sedimentation rates, changes in the vegetative composition of the marsh, and impacts to water quality. The Corps also notes that fish species which spawn on sandy or gravelly substrate, such as alewife blueback herring, and winter flounder, could be impacted by decreased long-term flushing of the estuary. The Corps acknowledges that project impacts and operational efficiency will need to be reevaluated in the future as sea level rises. Major operational and structural modifications, such as the construction of dikes and walls around the periphery of the estuary, may be needed in response to expected changes in environmental conditions. Since the impact of such actions could be severe and cannot be predicted with any degree of certainty at this time, we continue to recommend against construction of the floodgate plan. 2

Construction and operation of the project would limit future options for responding to coastal flooding from sea level rise. The regional flood control project is inconsistent with the intent of current Federal policies and laws, such as the Estuarine Areas Act, Coastal Barriers Resources Act, National Flood Insurance Act, Executive Order 11988 (Floodplains) and Executive Order 11990 (Wetlands), which discourage Federal support of development within estuaries and other environmentally sensitive areas. Significant development would likely occur within the SPN (standard project northeaster) floodplain during the 35 year project life, creating substantial public pressure to continue flood protection for such development regardless of economic or environmental costs. 3

Given the high degree of uncertainty regarding project impacts on estuarine dynamics and future public policy decisions, we continue to recommend that non-structural solutions to coastal flooding be implemented in the study area. Non-structural solutions would not adversely impact fish and wildlife resources nor would they have the potential for wide ranging, long-term ecological impacts. 4

We hope these comments will be of assistance.

Sincerely,



Jonathan P. Deason
Director
Office of Environmental Affairs

AG₂



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Northeast Region
Management Division
Habitat Conservation Branch
One Blackburn Drive
Gloucester, MA 01930-2298

April 17, 1990

F-1 5121 11
15 312 21-1

Joseph L. Ignazio
Chief, Planning Division
U.S. Army Corps of Engineers
424 Trapelo Road
Waltham, MA 02254

Dear Mr. Ignazio:

The Corps of Engineers has made significant positive changes in the project since the Draft report for the Saugus Flood prevention project. Project impacts of the Regional Floodgate Plan (Option 3) will be the loss of two acres of intertidal habitat and one acre of subtidal habitat, both containing shellfish. This impact is associated with the placement of fill for the flood barrier, revetments, and the dredging surrounding the proposed flood gates. However, the repeated closing of the floodgate and the projected sea level rise has the potential of causing major adverse environmental impacts to marine resources and associated habitats. Our major concerns are listed below in 11 categories.

1. Alternatives . The floodgate alternative proposed by the Corps (the preferred alternative, option 3) represents an unsound investment in the fight against natural forces. This is a classic barrier beach/salt marsh system which is constantly changing. No matter how much we battle nature we may lose as the sea-level rises and natural forces of wind and waves prevail. Federal and State policies discourage building in floodplains and on barrier beaches. Most of the high rise buildings along Revere Beach were designed to withstand some flooding. Therefore, federal investment in this project is seriously questioned. The federal government should only be involved in long-term solutions that are compatible with the natural ecosystem and make sound land use and public safety sense. The floodgate alternative is an example of the government paying for flood protection in a flood hazard area that should never have been developed. Worse, the floodgate would likely encourage further development.

Option 2, the nonstructural alternative that we prefer, is the only long-term alternative the federal government should be considering. Even Revere prefers nonstructural alternatives along the shore-front area, such as dune protection and sand replenishment instead of an armor stone revetment. Another potential alternative flood-



control measure would be to purchase undeveloped land in the floodplain zone around the estuary to limit its development and to provide a buffer between the estuary and manmade developments. The undeveloped land could be used for additional flood storage capacity. A requirement of this project should be to direct communities to legislate for strong flood-control measures either by prohibiting development or requiring developers to "floodproof" their buildings. 3

The Corps stated that this project will not induce further development but will cause a shift from less concentrated uses to more highly concentrated uses. In addition, the Corps has stated that natural forces like sea-level rise may cause additional flood damage in the future. This will require further government expenditures to protect those new developments, and will place additional pressure on the natural system. An example of this intensive development is the 2.5 million square foot development currently planned by the Trans Continental Development Corporation within the project area. This multiple use development would include office, retail, hotel, and condominium (800 units) uses. The Massachusetts Coastal Zone Management Office (MCZM) stated that this project will induce development as flood-control structures give an appearance of the area being safe for development. The NMFS concurs with MCZM. We must be prepared to make difficult decisions to abandon ecologically unsound development in the coastal flood plain. 4

2. Conflicts with Existing Laws and Regulations. The floodgate alternative may be contrary to the intent of the Coastal Zone Management Act. The plan does not promote marine resource management objectives for avoiding development in wetlands. Also, it represents unsound policy to be spending federal and state money in flood hazard areas. Executive Order 11988 - Protection of Wetlands may be violated as this project would cause increased development in the flood plain and cause further wetland deterioration. It may violate the anti-degradation regulations of the Clean Water Act. If the floodgates are not maintained or are closed too often, water quality in the estuary would be degraded. The state's designation of the marsh as an Area of Critical Environmental Concern and the resultant proposed upgrading of the water quality classification in this area as a "Outstanding Resources Water" may prohibit filling. Also, this project may establish a precedent for other barrier-beach areas to consider closing off a natural ecosystem with manmade barriers for flood-protection measures. 5

This project may violate the Anadromous Fish Conservation Act because the floodgate would constrict water flow and cause fish passage problems at the mouth of the Saugus River. The Corps should investigate impacts on anadromous fish and their habitat. 6

Also, in violation of the Federal Water Project Recreation Act, the

Corps did not give full consideration to the recreation opportunities presented by this project. The project affords excellent opportunities for fish and wildlife enhancement.

The Corps has authority to spend \$400,000 to enhance wetlands under Section 150 of the 1976 Water Resource Development Act. A discussion of how this Act could benefit wetlands should be included in the final project report.

3. Flood Gate Impacts and Sea Level Rise. The Corps states that sea-level rise will not cause undue stress on the environmental resources (Vol. 7 - p23) associated with this project. The NMFS agrees with the Massachusetts Division of Marine Fisheries, which does not support this conclusion.

The potential impacts on juvenile and adult fish need to be investigated to determine if fish will traverse the floodgate without significant impacts. Increased floodgate closures will change the salinity levels (location of the salt wedge), reduce dissolved oxygen, increase pollutants, reduce detrital export, and reduce sediment recharge to the estuary. These factors could change the spawning and rearing success of resident and anadromous fish and also impact many benthic organisms. For instance, if salinity changes are significant, an undesirable increase in abundance of Phragmites may occur along the edge of the marsh. so, habitat types could change resulting in greater replacement of marsh by open water. The Corps stated they cannot quantify the impacts at this time but agree that over time there will be impacts. The NMFS is concerned with the long-term impacts and believes there is a need to monitor these changes if the floodgate project is built. A more comprehensive study is needed of the effects the floodgate will have on the estuary as a result of constricting water flow and in the event of sea level rise.

As the sea level rises, the Corps proposes to build walls or dikes around the estuary in the upland to contain flood waters and increase flood storage area. The EIS (p8) states that the cost would likely be offset by eliminating the increased cost of operating and maintaining the floodgates from more frequent use. If it is inevitable that sea level will rise significantly, the Corps should not ignore this in the project report but should include an alternative of building walls or dikes around the estuary in the upland and rethink the alternative of the floodgate structure. The NMFS supports the MCZM office's request that the project be designed to accommodate a one-foot sea-level rise. If the proposed plan does not take this into consideration, potentially needed lands for the construction of future local upland berms, or dikes, will be developed and therefore not available. In this instance, project modifications to lessen impacts from increased floodgate closures may be impossible and may directly impact the marsh by requiring additional dikes and walls in the marsh itself.

4. Cumulative Impacts. The discussion in this section was of insufficient detail to assess the cumulative impacts of the project. This ecosystem has been impacted by many years of urban development and consequently most of the habitat has been degraded or lost. According to Gooselink and Lee (Cumulative Impact Assessment, Journal of the Society of Wetland Scientists, Volume 9, Special Issue, 1989, p93) "In order to assess the cumulative impact status of an area it is necessary to select an appropriate scale of analysis, characterize the 'health' of the landscape unit, and consider the assessment in the context of the whole area." The Corps did not use any cumulative assessment techniques to determine cumulative impacts.

5. Mitigation. It could not be determined what criteria were used to locate the mitigation site. Also, the mitigation plan does not have a mechanism to determine the success or failure of the plan. The Corps needs to develop measurable criteria that can be used to judge success. It is recommended that this District use the Waterways Experiment Station, which has a team of experts in wetland restoration, to help redesign its mitigation plan.

The document states that the shellfish transplants and other plantings would be surveyed after four years and the shellfish densities would be expected to approach a 2nd year recruitment population. Also, the Corps states that if the site does not contain any shellfish another transplant will be attempted as well as an ecological study of why the transplants failed. To determine the success or failure of transplants, a long-term monitoring study of the mitigation site should be conducted from the start of the transplanting program. Furthermore, the criterion to determine success (at least 80% of the normal densities of 2nd year recruitment population) should be specified in the final document. If the monitoring study is adequate and the mitigation plan fails, monitoring will be critical to determine the feasibility and success of the second transplanting.

Since most restoration attempts have been failures to date, it is important to have a backup plan. The most important step in any plan should be an extensive study of the hydrology and topography of the site. If the appropriate elevations can be established then the vegetation and organisms will have a greater chance of success.

Also, the mitigation ratio of 1:1 replacement is too low. It takes time (many years) for habitat to regain full productivity. Additionally, man has not been very successful in restoring the full productivity of natural environments. Therefore, the replacement ratio should be determined by using a habitat-based method such as Habitat Evaluation Procedure (HEP) and the known success rates of these kinds of projects.

6. Enhancement. The project should include simple measures to enhance the estuary. This area is designated an Area of Critical

Environmental Concern and should be treated as one. A major opportunity for habitat improvement exists with removal or reconfiguring the I-95 fill. The fill is currently a wasteland and nothing is growing in it. Motorcycles and other vehicles are constantly tearing up the embankment and causing continuous erosion into the estuary. The document does not present a convincing argument that the I-95 fill serves the only flood control measure to protect East Saugus. It may only prevent nuisance flooding. A mitigation plan should investigate removal of the I-95 fill. The fill could be used to build low berms along East Saugus to protect that community. At the very least, the I-95 fill on the Malden side of the river could be removed. This would be more important for the estuary ecosystem as a whole than creating clam beds.

The channel opening at the I-95 embankment is too narrow. The Corps states in their EIS (p45) that restrictive channel opening at the I-95 embankment reduces in the upper Pines River portion of the estuary. The opening at the I-95 embankment should be widened so the estuary can return to its natural state. If all the fill is not removed, at least a few breaks in the fill are needed to improve flushing/circulation in the estuary and to stop the use of this area by motorized vehicles. This will reduce the erosion and allow the area to regain some of its natural characteristics.

7. Design. The Corps stated in the final design that the floodgate structure may be improved. 'May be' is not acceptable. The Corps should be committed to implementing the very best design possible to improve flow through the floodgate. Such statements imply that the very best design to minimize damage to the environment has not been adopted.

8. Recreation Opportunities. The floodgate structure will be built a few feet in front of the State Fishing Pier, which will impact the recreational opportunities offered by the pier. This is a popular fishing spot for winter flounder, pollock, lobster and crab. Since this project has been recently approved by the Board of Engineers in Washington D.C., it is important that the Corps incorporate changes into its next planning\engineering stage. At this stage, the Corps needs to add enhancement and complete a hazardous analysis on the floodgate structure in order to include recreational access to the floodgate structure.

Also, recreation is determined to be 100% nonfederal cost share but this gives no incentive to the local sponsor to add recreation to this project. This should be changed to allow some federal cost share to improve the project for the general public. The impacts to recreational fishing opportunities should be discussed in the final project report.

9. Acquisition of Land. It is not clear if this project is going to use fee title or easements to protect flood storage. NMFS recommends fee acquisition of the estuary. This will allow better

protection of the estuary in the future. Easements usually cost roughly 80% or more of fee acquisition. Acquisition would ensure that estuary productivity could slowly be restored.

10. Incremental Analysis. The Corp's Incremental Cost Analysis (ICA) needs to be re-calculated (Appendix K - Part II). First, the mitigation ratio of the 1:1 was not justified appropriately. It states in the incremental analysis that the new marsh would require approximately 10 years to establish and approach the ecological value of the existing marsh. The Corps divides acre-years lost by 100-year project life to arrive at the number of acres it must compensate for. A HEP should have been used to determine the replacement ratio. HEP can determine how many years it would take to develop a clam site that approached the ecological value of the existing marsh. /

The Corps should reconsider its own guidelines in developing the ICA. The purpose of the ICA is to help determine the most cost effective way to mitigate habitat losses. An ICA discussion of alternatives and increments to evaluate should be presented in the final document. There are alternatives that for the same amount of money could generate greater environmental (habitat) benefits than the currently proposed mitigation plan. To determine the most cost-effective approach a realistic range of increments and alternatives should be explored. The Sacramento River Deepening Project in California is a good example of an ICA. The New England District should consider reviewing that plan for comparison purposes. /

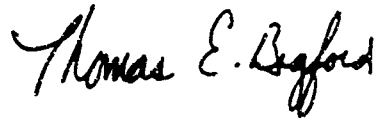
The Corps should more accurately quantify the loss values of the wetlands and associated resources. The commercial value of finfish and shellfish were the only parameters considered. This is a popular recreational finfishing and shellfishing area that generates many recreational benefits and need to be fully considered.

11. Conclusion. We recommend that the Corps revise the FEIS and file a Supplemental FEIS to consider the concerns discussed above. If this is not possible then these concerns should be discussed in the next planning stage. Since frequent closures of the floodgate would adversely impact the marsh and fishery communities, the project should be designed to accommodate a one-foot rise in sea level. The nonstructural alternative, Option Two, was not fully discussed in the FEIS and should be re-examined as well as the ICA, Cumulative Impact Analysis, and Mitigation Plan. Also, if the project is built, then a long-term monitoring program should be implemented. Furthermore, since there is a potential to improve the recreational opportunities and enhance the fish and wildlife values of the estuary, a recreational plan should be added. Finally, Section 150 of the 1976 Water Resources Development Act allows the Corps to spend \$400,000, at federal cost, to enhance wetlands and another \$400,000 to enhance fishery resources because /

of the potential to cause significant adverse impacts to marine resources. If the project were to be implemented, we recommend that the Corps obligate these funds toward enhancement of these resources.

If you have any questions, please contact Greg Mannesto at (508) 281-9340 or Chris Mantzaris at (508) 281-9346.

Sincerely,

A handwritten signature in cursive script that reads "Thomas E. Bigford". The signature is written in dark ink and is positioned above the typed name.

Thomas E. Bigford
Branch Chief

SECTION B

EOEA CERTIFICATE FOR MEPA PROCESS & COMMENT LETTERS



THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

February 20, 1990

MICHAEL S. DUKAKIS
GOVERNOR

JOHN DeVILLARS
SECRETARY

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS
ON THE
FINAL ENVIRONMENTAL IMPACT REPORT

PROJECT NAME : Flood Damage Reduction Study
PROJECT LOCATION : Lynn, Malden, Revere and Saugus
EOEA NUMBER : 6497
PROJECT PROPONENT : U.S. Army, Corps of Engineers
DATE NOTICED IN MONITOR : January 20, 1990

The Secretary of Environmental Affairs herein issues a statement that the Final Environmental Impact Report submitted on the above project adequately and properly complies with the Massachusetts Environmental Policy Act (G.L., c.30, s61-62H) and with its implementing regulations (301 CMR 11.00).

The comment letters from state agencies who have a major role in the implementation of this project indicate a continuing significant difference in philosophy from the Corps of Engineers, co-proponents with the state, regarding the advisability of this project as it relates to new development along the state's coastline and protection of development already in place. My office has designated the Metropolitan District Commission as lead state agency for flood control efforts for the Saugus River Estuary, and the Coastal Zone Management Office must find consistency in both the state and federal actions to that end. The larger question is whether this project represents sound policy and is one for which state funds should be expended.

However, the question of the moment is whether the Final EIR has presented an analysis sufficient to describe the potential environmental impacts of the project if it is pursued and if sufficient mitigation has been presented to allow all state agencies to either avoid or minimize those impacts. It is to this question that I will address the current Certificate. The decision as to whether this project represents an appropriate expenditure of public funds at this time is one which I and the relevant agencies within my Secretariat will resolve in the near term.

Among the important issues and requests contained in the

comment letters are: the viability of the marsh, the role of major storms in the sediment budget of the marsh, the ability to retrofit the proposed structures in the event of a 3 to 4 foot sea level rise, the effectiveness of flood proofing and evacuation, the responsibility of the facility manager, the lack of a Draft Section 61 finding, the role of the communities in the management of the area, final cost sharing responsibilities, land acquisition responsibilities, requests for preparation of a generic environmental impact report and a request for major and complicated designation under the MEPA regulations. These issues are addressed individually below. It is my conclusion that they have been sufficiently addressed to allow the decisions to be made as required by law.

MARSH VITALITY - Several commentators suggest that by stopping the peak of flooding events, the marsh complex would shift in composition and boundary. It should be noted that all marshes have been identified as existing below elevation 7. The proposed operation of the tide/storm barriers calls for closure of the barrier when the tide event has reached elevation 7, when all marsh would be inundated. At that time the Saugus River would continue to flow and most of the tributary land area not blocked by tide gates would continue to drain as well. Thus the water level behind the barrier will peak at levels above elevation 7. In addition, wind action within the estuary will continue to act on the water body to create internal circulation and tend to decrease salinity gradients as at present. Since no significant changes in tidal exchange, or low or mid tide levels are anticipated with the main gate and the "tainter" gates, I agree with the EIR conclusions that mitigation has been included to minimize the potential marsh impacts of the storm barrier.

MARSH BUILD-UP - Commentors have suggested that storm event sediment transport will be crucial to the survival of the salt marsh with sea level rise. It should be noted that the estuary is located behind a barrier beach which would be expected to contribute significant quantities of sand (sediments) during future storm events with sea level rise if it were not heavily developed and protected by structures at this time. The combination of these two factors limits the quantity of sand which would occur as a result of overwashes. The second major source of sediments are those from the river system. These are not changed by the barrier, or may be enhanced slightly as the flow gradient may continue longer into the basin behind the barrier. The last source of sediments is from reversals in river flow. Sediments delivered to the mouth of the river can move some distance upstream. In the case of the Saugus River, the

protection of Nahant and its causeway limit the ability of storms to deliver sediments to the river mouth. Only storms from the Southeast are significant in moving sands from the River beach to the river mouth. With the gates open until the storm surge reaches 7 feet, a significant period of sediment transport is preserved. Only long term monitoring of marshes will determine if they can adjust to sea level changes as they occur. This EIR is not the place to require such basic research.

WETLAND MITIGATION - Commentors have identified the state policy as requiring greater than one for one compensation for loss of wetland resource areas. I concur with that information and conclude that enough information is contained in the DEIR and FEIR for the appropriate state agencies to require the needed mitigation. The DEIR identified greater areas for mitigation as the amount of area thought to be altered was much greater. I conclude that the state regulatory programs can require the needed mitigation as they evaluate the project for the needed variances. There is a provision in the Wetland Protection Act to allow the DEP to rule on wetland alteration projects prior to the conservation commissions when the project involves more than one community. That process appears appropriate in this instance.

FACILITY CHANGES DUE TO SEA LEVEL RISE - The EIR has stated that the structures will be designed so that sea level changes up to 3 or 4 feet can be accommodated if future study determines that such changes are desirable, feasible and environmentally acceptable. A request by the state sponsor for the Corps to conduct an investigation under the Corps Section 216 authority for modifications to authorized projects would initiate the study. The capability to respond to sea level rise has been requested by state agencies.

EVACUATION/FLOODPROOFING - Comments indicate that many feel that evacuation and floodproofing are viable options and must be used to avoid any of the identified impacts to the environment. I am persuaded by the evidence in the EIR that flooding events in this particular estuary are difficult to predict in time to allow orderly evacuation. Study has indicated that combinations of events during the storm are in many cases crucial to the decision making and many false emergencies would have to be declared under the existing conditions. This information will be further reviewed as the state decides whether to endorse and participate in the recommended project.

FACILITY MANAGEMENT - The Corps of Engineers has determined that it can not manage the proposed facility and that

the state proponent would be the likely manager. Assuming that the determination is made to proceed with this project, I agree that this is acceptable and that the management agency must be responsible for both operation and maintenance of all facilities and that the agency must also take an aggressive stance in following all proposed development in the flood storage area and the adjacent floodplain. The basin will operate as in inland flood storage areas after construction of a flood barrier and any loss of flood storage capacity will be significant and must be, under the Wetlands Protection Act, compensated. The manager will be aggrieved under any Order of Conditions which does not protect the flood storage, and must therefore appeal the decision to the state. I will, through the MEPA Unit, make sure that all projects requiring MEPA review are consistent with this requirement. The ACEC status of the estuary will bring most proposed alterations within the estuary under MEPA review. A further responsibility of management will be to bring to the attention to appropriate local, state and federal agencies, any flood plain activity which has not been seen through the permitting process. I expect that a comprehensive management document determining local, state and federal responsibilities will be developed prior to any construction, and I encourage all interested parties to follow its development. The Environmental Monitor can serve as a vehicle to publicize developments.

STATE/LOCAL FUNDING - Once the environmental review is completed it is time to work out the split in responsibility between the state and the local communities who benefit from the flood protection. I fully expect this to be resolved prior to state commitment to the program.

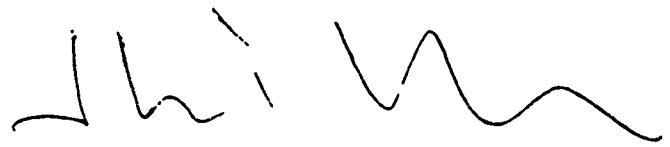
ACQUISITION OF FLOOD STORAGE LANDS - Comments have suggested that the land acquisition may not occur. It is my position that the land acquisition is now a part of the program and that it must occur. If that fact should change, the environmental review of the project would be reopened in response to notification of project change.

SECTION 61 FINDINGS - The most serious issue raised is the lack of Draft Section 61 findings in the document as required by the scope and again in the Certificate on the DEIR. I am disappointed that the draft is not included, but conclude that its absence is not fatal as several summaries of impacts and mitigation are included. These include Table 5.1 of Section 2, Table 1 following page EIS-2 of Section 2 and the last pages of Appendix K. I should note that some of the conclusions as to potential impact are given after redesign to minimize impacts and

the Section 61 Findings should so indicate. My call for a Draft finding in the EIR was to assist all state agencies in carrying out their mandated responsibilities. In lieu of the Draft in the EIR, I ask that the state sponsor prepare a Draft finding which I will publish in the Environmental Monitor for comments from the public.

GEIR/MC STATUS - Finally I have been asked by state agencies and others to consider requiring that a Generic Environmental Impact Report on flood control all along the state coastline in response to sea level be required prior to any state decision to participate in this project. I have also been asked to invoke Major and Complicated status under the MEPA Act, presumably so I can require a further series of reports prior to completion of the environmental review for this project. First, both of these decisions are properly made when the ENF is filed, not at the review of a FEIR. I do not find that the conditions in the Saugus River Estuary are typical of our coastline. It may be desirable to review the state response to flooding forecasts over the next 30 to 100 years but I do not think this project is the proper vehicle for that review. Major and Complicated status is reserved for projects where a long series of decisions must be made as it allows incremental approval of a project. The decision to be made for this project is whether it should go forward, and if so, what mitigation is necessary. I conclude that the normal EIR process is appropriate.

February 20, 1990
Date



John DeVillars, Secretary

Comments received : MCZM - 2/12/90
CLF - 2/9/90
SWIM - 2/5/90
MACC - 2/6/90
Lynn Planning Board - 2/6/90
SAVE - 1/25/90
DMF - 2/6/90
Revere City Council - 2/2/90
Mayor of Revere - 1/25/90
Point of Pines YC - 1/23/90
MDC - 2/9/90

JD/DES/ds



COASTAL ZONE
MANAGEMENT

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202.

RECEIVED
FEB 12 1990
MEPA

TO: Janet McCabe, Director, MEPA Unit
FROM: Jeffrey Benoit, Director, MCZM Office JNB
Date: February 12, 1990
RE: EOE #6497 - FEIR Saugus River & Tributaries Flood Damage Reduction Study

The Massachusetts Coastal Zone Management (MCZM) Office has reviewed the Feasibility Report & Final Environmental Impact Statement/Report for the project referenced above which was noticed in the Environmental Monitor dated January 12, 1990.

It remains the opinion of the MCZM Office, indicated in all our previous correspondence, including comments on the Environmental Notification Form and Draft Environmental Impact Report, that nonstructural flood control methods are preferable over more costly structural methods. We therefore continue to support the proposed Nonstructural Plan (Option #2) with suggested modifications as outlined below.

If, however, the Corps of Engineers decides to continue to pursue Options #1 or #3, MCZM requests that the Secretary designate this project to be "major and complicated" as specified in 301 CMR 11.12. Normally this decision is made prior to or during the scoping process. In the present case, however, the sheer size of the project and the level of information presented (thus far we have seen only conceptual designs allowing no more than a general overview of the project) make it extremely difficult to clearly assess the magnitude of environmental impacts. Far more detailed information and criteria will be needed for adequate review. The Corps of Engineers has provided a good environmental analysis of the physical characteristics, hydrology, and hydraulics of the estuary as it exists, and for each of the proposed options. They feel they can design the flood gates in option #3 to achieve their desired goal of flood reduction. However, the details of the project remain to be calculated, designed, and presented. The review process thus far has included a highly commendable coordination effort. Major and complicated status within the MEPA process will ensure the continuance of this coordination as details of the preferred alternative are developed.

Comments concerning COE Preferred Alternative - Option #3:

The preferred alternative (Option #3) chosen by the Corps of Engineers cannot be supported by this Office for the reasons which follow:

Induced Development: In the opinion of this Office, the documents produced thus far clearly support the notion that induced development in the Standard Project Northeast (SPN) project area will occur as a result of the construction of regional floodgates and the associated proposed structures.

The documents suggest that development will occur within the study area whether the project is constructed or not. Each of the four communities within the study area is in the midst of an aggressive effort to attract new development. More intensive use of already developed land is likely to occur (p. 21). The study area contains only a limited amount of undeveloped uplands available for new development, however, as long as it is economically feasible, all available land in the study area will be developed.

If the structural approach is taken and the peak flood levels are reduced, the flood plain boundary will therefore be correspondingly altered. The presence of the flood control structures and modification of the flood plain will certainly give the impression that the area is safe from harm and development may occur with impunity. This quite probably will cause rapid development of existing vacant land currently constrained by flooding considerations, as well as more extensive use of structures already in place within the present flood plain but excluded from the redefined boundaries. Such a rapid development would leave these structures in a highly vulnerable position in the case of failure of any aspect of the flood control structure. Such a situation could occur either as a consequence of sudden failure of the structure or due to lack of proper maintenance (maintenance would be the responsibility of the Commonwealth). Further, in the face of documented sea level rise and the prospects for an increasing rate of rise over the foreseeable future, the status of the structure will have to be assessed for retrofitting, possibly as soon as 35 years after construction. Having the upland areas developed to the maximum extent possible would ensure that the need for ever-increasing structural protection would continue. Therefore vulnerability would increase over time due to increased development, potential deterioration of the complex network of flood protection structures, and an increasing rise in sea level.

The Study has suggested that to prevent such a rapid growth scenario three steps should be taken:

- a) The State should acquire all wetland areas behind the flood control structures,
- b) The State should acquire the approximately 140 acres of undeveloped land behind the flood control structures but within the existing flood plain boundaries, and
- c) New land use statutes or controls should be created to limit development in the existing flood plain.

We are not convinced that these three standards could or would be

met given the current thrust for development in the communities and the financial cost to the Commonwealth.

The non-structural approach should be expected to show a much slower rate of development. Any new structures would be expected to meet the floodproofing standards of the State Building Code under the local flood plain bylaw. Concern over damage from flooding, and the increasing costs of repair from damages from a rising sea level should provide a natural deterrent.

Government policy must be aggressive in avoiding, as well as discouraging, development in flood prone areas such as the study area. The lessons learned as a result of the massive amount of tax dollars spent and the loss of life and property as a direct result of unwise development in repeatedly flooded areas, witnessed in many coastal communities and documented in the study area, must be taken seriously. This Office remains convinced that induced development will most assuredly be a result of implementing Option #3.

COSTS: The initial cost of the Regional Floodgate Plan (Option #3) is approximately \$100 million. Depending on the nature of the costs, the share to be borne by the Commonwealth is projected to be between 35% and 50% (\$35 - \$50 million). The average annual operations/maintenance/repairs cost (the responsibility of the Commonwealth) is projected to be \$230K (in 1990 dollars). Retrofitting the structures in the face of rising sea level (again the responsibility of the Commonwealth) is projected to be \$15 - \$20 million per foot of rise. Under the worst case scenario this would be called for in 35 years. Under the current rate of rise, these expenses would not be needed for 100 years.

In our August 10, 1989 comments to MEPA on the Feasibility Report and the DEIR, we stated that this project would provide an excellent opportunity for the federal government to take creative and expansive policy approaches in developing cost-sharing measures with the individuals and businesses which will directly benefit from this project. The individuals and businesses who will derive direct social and economic benefits from this option are not being required to contribute to the costs of this project. We feel it unfortunate that the Federal government missed this important opportunity. This is especially true as we expect that we will see a growing number of such projects proposed in light of the anticipated increase in erosion and flood events as a result of the documented relative sea level rise.

SEA LEVEL RISE: In light of the documented rate of relative sea level rise of 1 foot per 100 years in the study area and a generally accepted future accelerated sea-level rise rate, this project provides an excellent test case for the policy of the

Commonwealth in such situations. As sea level rises, substantial public funds will be requested to bail out large areas where unwise development has been encouraged in hazardous, floodprone areas. Government must decide whether to subsidize all such future flood damage reduction project requests, even in communities that continue to encourage floodplain development, or to take more reasonable and creative approaches, such as education, avoidance, and individual cost-sharing, particularly in these fiscally troublesome times. The MCZM Office does not support continuing to encourage development in hazard-prone, flood plain areas through the construction of massive projects such as this one.

For the project at hand, the Corps suggests an acceptable benefit/cost ratio over 35 years. At that point the project must be reassessed based on the experience with the structural stability, maintenance, and the amount of sea level rise. The decision at that point will be whether to renovate/retrofit the structures in the complex or to abandon the system and allow the flood plain to re-establish itself. It is the contention of this Office that the level of increased development in the lee of the structures will make it unfeasible to abandon the system and force us into even more costly and complicated means to attempt to control the forces of the sea and wind.

We must be mindful of the fact that, due to the rising sea level, if the project were to fail, or be abandoned at the 35 year point, the flood plain bounds would have moved landward thus exposing even more structures to the forces of nature.

The MCZM Office, therefore, requests that if the Corps continues to pursue option #3 that all structures, floodgates, seawalls, dikes, etc., be designed and constructed to accommodate a 1 foot relative sea level rise and to design and construct all structures to allow retrofitting for an accelerated sea level rise of 3 feet consistent with the recently released MCZM Sea Level Rise Policy (see attached). This 3 foot rise is less than the NRC's high estimate which the Corps is required to consider based on recent Federal policy. These costs should be a part of the initial cost-sharing planning and construction costs.

WATER QUALITY: Related specifically to water quality issues, the COE has not addressed our previous comments that the water quality classification for the Saugus/Pines Rivers is SA, not SB. They acknowledge that the designation of much of the site as an Area of Critical Environmental Concern (ACEC) requires the Department of Environmental Protection to upgrade it from its current rating of SB to SA. The issue is not discussed further. The proposed Water Quality Standards have been available for some time, and waters within the ACEC are clearly classified as SA. This classification, in turn, means that the COE's analysis for water quality conditions, both existing and proposed, needs to be redone. Without

this analysis we cannot accept these documents as satisfying this stage in the MEPA process. They also do not appear to have coordinated with the ongoing planning efforts for the Lynn Combined Sewer Overflow controls. In addition to the SA standards, anti-degradation requirements must be met. This issue is not addressed at all.

WETLANDS ISSUES: To mitigate the loss of wetlands areas that will be destroyed, the COE has proposed replacement of a clam flat inside (landward of) the current I-95 fill. No details are provided as to how or why this project was chosen as mitigation or whether it has been fully analyzed as to whether it is likely to succeed. In view of the evidence that the I-95 fill is severely retarding the circulation in the upper reaches of the estuary, it would seem far more valuable to consider removing a portion of the fill as a mitigation measure, considering the value of increased circulation and sustained flood control for areas landward of the fill. 9

The documents totally ignore the impacts that reduction of extreme flooding events will have on the high marsh. Occasional flooding is critical to the maintenance of certain areas, particularly in the upper reaches which are acknowledged to be already suffering from pollutants and sedimentation. Cutting off the occasional flood tide through the use of tide gates, particularly in the face of sea level rise, is expected to have adverse impacts on the outer perimeter of the marsh. Another likely side effect is that these areas will become more susceptible to illegal filling when these high marsh areas start to dry out and the marsh plants die back. With decreased flooding, Phragmites sp. may also grow in the fringe areas, causing additional degradation of the wetlands. The document does state that there will be a build up of levels of coliform bacteria (an indicator of fecal contamination), nutrients, and oxygen demand in the upper reaches of the estuary and, with a reduction in extreme flooding events, these parameters will cause increasing violations of water quality standards and resultant degradation of the resources of the estuary. /C

The documents also call for increased enforcement of wetlands protection laws, but given that the COE, EPA, and State agencies are fiscally constrained, it seems highly unlikely that there will be any potential for increased surveillance and enforcement.

WILDLIFE ANALYSIS: The wildlife analysis on pages 78-84 of the EIS is very general and contains little analysis of the impacts to this resource.

OPTION #2; SUPPORT & SUGGESTIONS: The MCZM Office continues to support a non-structural option, with modifications, for many of the reasons stated above and outlined below. There are no significant impacts associated with this option. It was not chosen by the Corps as the preferred alternative because of the small number of buildings that have the potential for floodproofing. This Office contends that if government is to continue protecting private facilities from flood damage, in light of sea level rise with the attendant increased numbers of flooding events and the expected significant increase in requests for government subsidies for this type of protection, it is not the number of structures which should be the qualifying criteria, but the type of structures. MCZM suggests that existing facilities of public necessity (such as power generating facilities, emergency operations facilities, hospitals, and the like) should be given priority for flood damage reduction funds. In addition, flood preparedness and evacuation plan formulation, public education, and the raising of emergency evacuation routes above a specified flood level should be consolidated into a community or regional federally subsidized plan. The avoidance of future location of these facilities in hazardous flood prone areas, unless they are water dependent, must be mandated by all levels of government. Private facilities which choose to locate in these hazard areas should bear the associated damage costs. A bill is presently before the Massachusetts State Legislature which would mandate acknowledgment of the degree of flood and erosion hazard risks on a property in the deed. The federal government should support similar legislation to inform a prospective property owner in order to avoid flood damage losses at the general public expense.

For the project at hand, MCZM suggests that Option #2 explore the feasibility of identifying facilities of public necessity, such as those mentioned above, and providing them with individual flood protection. Emergency evacuation plans should be formulated and evacuation routes should be raised to the SPN level and an aggressive public education effort be implemented. Major arterial routes identified in the reports as significantly impacting the regional economy may also be candidates for raising above the SPN level. This will reduce the financial impacts of disrupting the major commuting work force to areas vital to the economy of the Commonwealth.

JRB/JOC/JPS:sb



Conservation Law Foundation of New England, Inc.

RECEIVED
FEB 12 1990
MEPA

3 Joy Street
Boston, Massachusetts
02108-1497

(617) 742-2540
Fax: (617) 523-8019

February 9, 1990

Director
Washington Level Review Center
Casey Building
Fort Belvoir, VA 22060-5586

David Shepardson
EOEA/MEPA Unit
100 Cambridge St.
20th Floor
Boston, MA 02202

RE: CWIS No. 14021

RE: EOEA File No. 6497

Following are our comments to the FEIS/FEIR on the Saugus Floodgate proposal. We have also attached a copy of a separate letter we have sent collectively with other environmental groups to EOEA Secretary DeVillars objecting to the project. As review of that letter will make abundantly clear, we are not supporters of this sort of "flood protection" project. Nature polices its own shore, and efforts like this floodgate to protect people who tempt fate are bad public policy and inappropriate, particularly with the current budgetary crisis present in Massachusetts. Programs to acquire and protect underdeveloped resources that benefit all the people of the Commonwealth go begging, while programs to find \$88.5 million for "flood protection" for bad land use planning continue.

Beyond a basic difference over that ideological point, however, there are some positive changes in the project for which we want to give due credit to the Corps.

First, we want to commend the Corps on the revisions to the project that significantly reduced the construction and direct project impacts to wetlands. It is heartening to see the Corps' responsiveness to this issue.

Second, we are very pleased with the response of the Washington Level Review Center on the topic of protection of the estuary flood storage area. Not even the best regulatory system one could imagine adds the certainty of acquisition of the storage areas by the state or local government. We are concerned that the MDC, or preferably, the local governments acquire the storage area before any of the construction of the project commences. Failure to make such acquisition a precondition will deprive the Corps of all the leverage it otherwise would have on

Conservation Law Foundation of New England, Inc.

this important matter. Similarly, we expect that the MDC would make prior appropriation and acquisition a requirement in its Section 61 findings under MEPA.

A number of other issues need to be considered:

- Estuary storage capacity above +7 feet NGVD should be protected.

Adequate storage capacity within the estuary is critical to the proper function of this floodgate so that interior runoff and overtopping ocean waves can accumulate behind closed floodgates without flooding the very buildings and facilities that the plan is designed to protect. The storage proposed for protection below 7 feet NGVD is not sufficient given all the real world operational uncertainties of this project.

In 90% of floodgate closures, those brought on by frequent storms, the plan calls for closing the floodgate only when the tide has already reached 7 feet. Therefore the storage capacity protected by the planned land acquisition will already be full or nearly full of water. The plan formulation states that during these frequent storms "one foot of storage would be made available (between Elev. 7.0 and 8.0 ft. NGVD)." A-99 If there is no protection for storage above 7 feet NGVD, however, where will the interior runoff and overtopping ocean waves accumulate during these closures? The plans for land acquisition must extend higher.

If the floodgates will in fact be closed before the tide has reached 7 feet on most storms in order to assure sufficient storage capacity behind the floodgate, then the negative impact to the marsh in terms of reduction of sediment nourishment from the ocean will be increased. We do not believe that this situation has been adequately analyzed and question the degree to which even a highly detailed operations manual will render these concerns moot.

Consideration of this question has led us to review the potential for floodgate-induced flooding if the floodgate is not closed soon enough in a rare, large storm because of delay or miscalculation or if storm conditions are more severe than forecast (A-103). Has the Corps or MDC analyzed the question of whether the MDC would be liable for flood damages if the flooding is due to operator error? It may well be prudent to build pumps for back-up protection to pump out excess water to avoid floodgate-induced flooding in such instances.

Conservation Law Foundation of New England, Inc.

- Further analysis of the impact of the floodgate closures on sediment deposition in the salt marsh is warranted.

The Saugus River floodgate would only be closed in storms where the tidal height was expected to reach or exceed 8 feet. This would occur 2-3 times per year initially and 35-45 times per year after sea level has risen one foot (how soon that will occur is not known). We are very concerned with the likelihood that these closures would significantly reduce the input of sediments to the saltmarsh, in spite of their infrequency, and thus cause a reduction in area of saltmarsh, even at current sea level.

Paragraph 8.37 in the Final EIS describes the problem:

"As far as wetlands are concerned, the operation of the floodgate would eliminate the highest tides with increasing frequency assuming sea level rise continues. According to Reed (1988) "Sediment can only be deposited during spring tides which flood the marsh, and during high water levels under storm conditions."

As the gate is closed more and more frequently ..., more of the higher level and higher velocity tides which are capable of carrying sediment into the estuary will be eliminated. This could [we assert that it would] result in a decrease in the amount of sediment input to the marsh. The decreased sediment input would retard the ability of the marsh to keep pace with sea level rise resulting in greater replacement of marsh with open water. The magnitude of this impact is not known and would be dependent on the difference between the without project supply of sediment to the marsh and the with project supply." Final EIS-151 (emphasis added).

The key to the problem is that, although storms occur infrequently, they are responsible for supplying most of the sediments that allow saltmarshes to maintain themselves over time and keep pace with rising sea level. Removing the influence of the storms thus poses a major threat to the saltmarsh, but there has been no attempt to quantify the threat. The environmental impact assessment of the Saugus River floodgate project is consequently inadequate on this vital matter.

The claim that "the input of sediments from Lynn Harbor and Broad Sound is minimal" because "relatively minor amounts of sediments have accumulated in the Saugus River Channel since the last major dredging in 1952" (Final EIS-147) is not persuasive. It is possible that the channel allows suspended sediments to pass through without deposition until higher in the estuary when

Conservation Law Foundation of New England, Inc.

current velocity decreases. Thus accumulation of sediments in the Saugus River Channel is not a reliable measure of accumulation in the saltmarsh.

The following research needs to be undertaken to quantify the likelihood of sediment starvation destroying the saltmarsh:

1) Measure historical rate and source of sediment accumulation in several representative locations around the marsh by dating sediment core samples with lead 210 and examining the sediment to determine the relative importance of peat, riverine inputs, and inputs from the estuary and the ocean.

2) Measure actual sediment input by putting down a distinctive marker layer in several representative locations and measuring and classifying the sediments that accumulate on top of it over at least one year, taking samples after any big storms.

The claim of the EIS that this project will have minimal negative impact on the health of the saltmarsh can be substantiated only if the sediment input turns out to be predominantly peat and/or riverine. It is likely, however, as the EIS suggests (Final EIS-147), that the riverine inputs are minimal.

• The project provides an inadequate mitigation ratio for replicated wetlands.

Many commenters, including CLF, took issue with the low mitigation ratio (1:1) planned for replicated wetlands, requesting instead at least a 2:1 ratio of replicated to destroyed wetlands. The Corps response was as follows:

Any mitigation in excess of habitat value compensation would be classified by Corps policy as environmental enhancement. We would expect our mitigation scenario to be adequate and that the public benefits of this project will warrant the Commissioner of DEP to issue appropriate variances.

Response J. 11

It appears that the Corps has missed the important point that the value of lost wetland habitat is not fully compensated unless the mitigation ratio is at least 2:1 because of the difficulty in establishing a new wetland community of plants and animals that functions like the community that is destroyed. We appreciate the changes to the plan which reduced significantly the acreage of wetlands lost, but we reiterate our request that

Conservation Law Foundation of New England, Inc.

impacted wetlands be replicated on a 2:1 ratio. We maintain that only with this ratio will mitigation be adequate and equal to compensate for habitat value lost.

- There is an error in correcting description of contaminants in section on affected environment.

4

In our comments on the Draft EIS, we pointed out that cadmium should have been included in the list of metals which sometimes exceed the chronic water quality criteria. The Corps response was that paragraph 6.31 would be revised accordingly. In making the revision, however, the Corps mistakenly added chromium, not cadmium to the list of metals which occasionally exceed chronic criteria in paragraph 6.31.

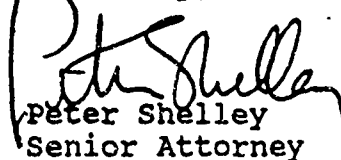
- Failure to include Draft MEPA Section 61 Findings

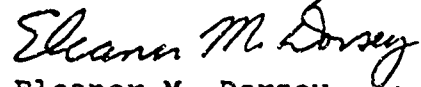
5

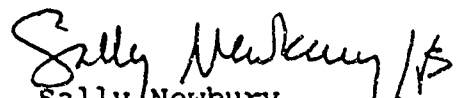
The Secretary's certificate on this project required that the MDC circulate its proposed Section 61 MEPA findings with the Final EIR. We were unable to locate this critical document.

Thank you for this opportunity to comment on the project.

Sincerely,


Peter Shelley
Senior Attorney


Eleanor M. Dorsey
Staff Scientist


Sally Newbury
Staff Attorney

cc: Robert Hunt NECOE



Conservation Law Foundation of New England, Inc.

3 Joy Street
Boston, Massachusetts
02108-1497
(617) 742-2540
Fax: (617) 523-8019

February 9, 1990

HAND DELIVERED

Honorable John DeVillars
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA

RE: Saugus River and Tributaries Flood Damage Reduction Study
EOEA File Number 6497

Dear Secretary DeVillars:

The undersigned groups are seriously troubled by the Corps of Engineers(COE)/Metropolitan District Commission floodgate proposal for the Saugus River. Although we acknowledge the positive efforts made to reduce the wetlands losses and other adverse impacts identified in the draft EIR and the Corps' decision to mandate protection of flood storage through acquisition, the final EIR does little to alleviate some of our fundamental concerns. Individual comments on the FEIR will be forthcoming to MEPA, but collectively we wanted to raise several issues with you.

We firmly object to underwriting unwise floodplain and coastal development with federal and state "flood protection" money. As you well know, it is just bad policy. Shoreline and floodplain development is promoted, not discouraged as it should be, when local governments and property owners are bailed out by state or federal subsidies and never suffer the consequences of their bad land use practices. Elimination of federal and state subsidies is the only clear way to break the vicious cycle of flood plain development/government intervention.

Nonetheless, the MDC seems to condone the "bail out" policy, having now made clear its intention to ask the taxpayers of the Commonwealth to assume the full \$33 million non-federal share of this project. It is simply indefensible and inequitable for the

B36

Conservation Law Foundation of New England, Inc.

state, through the MDC, to propose the use of tax money to protect the private property interests of the few, particularly when those few have voluntarily assumed the risk of building or locating in flood-prone areas.

Moreover, with accelerated sea level rise predicted along our coast, all developed communities are likely to be threatened. Faced with that fact, there is at present no basis on which to conclude that this project should take precedence as the most cost-effective investment that the state should be making in coastline protection.

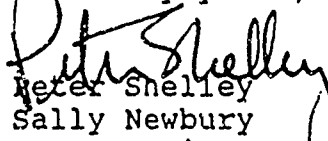
If the state is indeed determined to underwrite the costs of true coastal protection, the first step should be to identify where the most valuable statewide coastal resources or the most threatened public facilities are located, to model and map the impact of sea level rise on those resources, and to analyze the cost-effectiveness of various possible protection strategies. These strategies should range from land acquisition (the only realistic long-term protection) to zoning and other non-structural solutions. Only after such an analysis is performed can statewide priorities for coastal protection investments be established.

Therefore, before any state money is sought for this project and before the MDC commits the taxpayers of this state to any of the non-federal share of the project, we request that you develop a statewide sea level rise response strategy. The generic environmental impact report process seems most appropriate for this purpose with the Office of Coastal Zone Management as lead agency. Such an effort, while considerable, would only represent a fraction of the Saugus project costs and would provide a proper context for the first time for informed decision making that is wholly lacking in the Saugus floodgate proposal.

Nancy Anderson
New England Environmental
Network

Peg Brady
Massachusetts Audubon/North
Shore

Sincerely yours,


Peter Shelley
Sally Newbury
Conservation Law Foundation

Caroline Simmons
Mass. Association of
Conservation Commissions

Polly Bradley
SWIM

B3,



Nahant SWIM, Inc.
Safer Waters in Massachusetts

February 5, 1990

Director
Washington Level Review Center
Casey Building
Fort Belvoir, Virginia 22060-5586

Ref: CWIS No. 14021
EOEA File #6497

Dear Sir:

Wetlands and beach areas are living, dynamic, moving systems. These are the areas of geological instability as well as high value in terms of wildlife habitat/marine spawning grounds. One must be very careful in trying to "fix" a dynamic system.

The Saugus River Floodgate Project is unwise for many reasons, including:

- * It is an effort to lock a classic barrier beach/salt marsh system into a man-made prison of metal and concrete.
- * It would encourage inappropriate wetlands development, which would be a continuing expense to taxpayers as the restless sands shift and the powerful ocean attempts to breach Revere Barrier Beach.
- * It would damage wildlife and fisheries, a particular concern of Nahant SWIM, whose fishermen and lobstermen depend upon the health of Lynn Harbor/Broad Sound ecosystem for their livelihood.
- * The estimated cost/benefit ratio is low (1:1.3) and questionable.

Tax money should not go into this project until it is certain that this is the best way to deal with the national problem of flood control in the face of predicted sea level rise. We request a scientific and economic study on the federal level to develop a strategy for protecting both the public and the environment in the eventuality of sea level rise. On the state level, Massachusetts should go through the generic environmental impact report process, with the Office of Coastal Zone Management as the lead agency, to determine whether the state should spend tax dollars for the non-federal share of the project. This is the only way to assure that the taxpayer gets the best bang for the buck.

If the project goes forward in spite of environmental problems, we insist that FIRST the salt marsh be acquired, by purchase rather than by easement, THEN the floodgate be built. This is the only way to protect the marsh.

We fully endorse the Conservation Law Foundation testimony on the project.

Sincerely,

Polly Bradley

Polly Bradley, President

B4

cc: David Shepardson, Massachusetts Environmental Protection Act Unit

SWIM, c/o Northeastern University Marine Science Center, East Point, Nahant, MA 01908
Phone: (617) 531-0075 or (617) 531-1424



MASSACHUSETTS ASSOCIATION
of CONSERVATION COMMISSIONS, INC.

10 JUNIPER ROAD

BELMONT, MA 02178

(617) 489-3930

RECEIVED
FEB 8 1990
MEPA

February 6, 1990

Director
Washington Level Review Center
Casey Building
Fort Belvoir, VA 22060-5586
Reference: CWIS No. 14021

Mr. David Shepardson
EOEA/ MEPA Unit
100 Cambridge St., 20th Fl.
Boston, MA 02202
Reference: EOEA No. 6497

Gentlemen:

On behalf of the Board of Directors of the Massachusetts Association of Conservation Commissions I would like to file the following comments on the Saugus River Flood Reduction FEIS/EIR.

MACC notes that there have been several changes in this proposal which we view as improvements, namely relocation of the Lynn Harbor revetments landward of the MHW, which will reduce the impact on intertidal habitat and waterfowl feeding areas; a reduction in the size of the mitigation area, although it still does not meet the 2:1 ratio requested by the National Marine Fisheries Service and the Massachusetts Office of Coastal Zone Management and in which we concur; and finally the inclusion in the floodgate project of provisions to acquire the 1650 acres of saltmarsh within the estuary (though no firm action plan for this acquisition continues to make it problematical).

Despite these changes in the proposal, MACC cannot support the floodgate project for the following reasons:

1. We believe the construction of a floodgate across the Saugus River to be precedent-setting for a sensitive estuarine area containing valuable and extensive saltmarsh which has been designated for special protection as an Area of Critical Environmental Concern (ACEC). While immediate impacts appear to be minimal, we do not think that the Corps' scenario of a 1 foot sea-level rise will be without impacts when gates are closed as often as 35-40 times per year. The FEIS/EIR 8.41 mentions the potential for a reduction in DO and salinity levels; increases in pollutants in the estuary; and loss of sediment input to the saltmarsh (8.37 ff) as some of the impacts which could be expected with 30-45 gate closings. Changes in salinity could also result in an increase in *Pragmites* sp. at the edges of the upper saltmarsh. A 4 foot sea-level rise in a century is less than many scientists are predicting (NRJ predicts 4.2 and EPA predicts as much as 8 feet). The Corps response to these higher rates is that they will respond (if it happens) with three possible action plans 1) operating the gates as frequently

B5,

as necessary to hold the tidal level within the estuary at 7 feet. This plan could result in upwards of 45 closings per year to as many as 500, according to figure 8, p. 150 FEIS/EIR. Five hundred closings would be more than one a day if the sea-level rose 4.2 feet!! 2) Building walls around the estuary up-land of the marsh in order to reduce the number of gate closings needed; and 3) abandoning the floodplain. This last plan is tantamount to a no-action plan, but once the floodgates are built it would be unrealistic to think it would be implemented. Much more likely would be an increase in gate closings in response to public demand, since the facility would be in place and operated under local auspices. 3

2. The Corps states that it is a requirement under the Water Resources Development Act of 1986 that non-federal sponsors operate and maintain projects after construction. MACC has grave concerns in regard to local operation of these gates as they require highly trained personnel. Ms. Alexandra Dawson, former President of MACC, in her comments for the DEIS/EIR has already cited the poor performance record for a project operated locally in Wellfleet, Massachusetts.

3. The MACC comments, in the DEIS/EIR, pointed out that despite Federal and State policies which are promulgated to discourage building in floodplains and on barrier beaches, the communities of Lynn, Saugus, Revere and Malden have done little to comply with these policies. Building in the flood-prone areas continues. Under present conditions individuals and businesses can buy flood insurance through NFIP, a program subsidized with tax-payers money. New construction must meet FEMA standards, but can still be built in flood-plains and obtain insurance. MACC is strongly opposed to committing \$88 million (to-day's dollars) in public funds to provide flood protection to communities which have made no effort whatsoever to comply with good land-use practices. Furthermore, it is inequitable to provide these communities with what amounts to 100%, no deductible, Federally and State funded protection by the floodgates, while residents and businesses in almost all other flood-prone areas of the coast must buy limited coverage, if they can obtain it at all, or must attempt to protect their shoreline property at their own expense (provided State regulatory agencies will allow it). Certainly the owners of houses on the Chatham dunes would be interested in the inconsistency which will prevail if this flood-gate project is authorized! 4

4. Federal and State agencies, some local politicians and all the public interest groups who have commented on this project have reached the conclusion that the installation of floodgates will serve to hasten development in the remaining 237 acres (more than 500 lots) in the floodplain which would be protected by the floodgates. This is not an insignificant acreage, as the Corps avers. MACC, in comments on the DEIS/EIR, requested that the Corps identify the location of the undeveloped parcels. EPA, Region I, made the same request, but the Corps has not responded. If much of this land is along the perimeter of the marsh, its value could increase substantially after the floodgates are built and the threat of flooding has been removed. An increase in value could increase the temptation to fill the wetlands illegally, whether or not they have been acquired. 5

Paragraph 4c of MA-NED Response to the Washington Level Review Team lists four projects, valued at over \$660 million, which are planned for construction in the flood-plain adjacent to Lynn Harbor. Possibly other projects in the study area are in the minds or on the drawing

boards of developers. Every one of these private projects will benefit financially from protection provided by the sea-walls which are to be built at public expense. They will receive additional benefits in lowered construction costs if the FEMA requirements are eliminated after the revetments are built. How many other flood-prone communities will expect similar bail-outs in the form of massive flood control projects as "rewards" for the folly of disregarding Federal and State policies against building in flood plains?

Failure of the Corps to recognize the spur to development which the flood gates will engender re-inforces the conclusion that the Corps is not interested in serious consideration of any other option and it appears that it will turn truth on its head to push this project through. For example, MACC has cited, in its previous comments, cases where benefits have been unreasonably inflated and damages exaggerated. In this FEIS/EIR the Corps states that motorists must travel 40 miles out of their way to reach Boston when there is substantial flooding in the study area. This is nonsense, as routes 1, 16 and 99 are all close by, lead to the Boston metropolitan area and are much closer than route 128. We suspect that with careful analysis the 1:1.3 cost benefit ratio would be closer to 1:1. 6

5. The Corps, citing lack of public interest, has not adequately investigated ways in which the non-structural option, Option 2, could be implemented to provide reasonable flood control and increased public safety. MACC heartily concurs with the comments and suggestions of the Division of Water Resources of the Massachusetts Department of Environmental Management which are included in Appendix J of the FEIS/EIR. These include Corps assistance in identifying buildings for floodproofing as well as help with design local communities pressing for legislation to provide low-interest loans for floodproofing; up-grading flood warning systems and alerts; developing good community evacuation plans; promoting better participation in the FNIP program which presently is not well utilized (perhaps indicating that the public does not worry very much about the flood threat); and promoting adoption of strict floodplain zoning or by-laws. Some of the money which would not be spent on the flood gates might be used to acquire vacant land or sub-standard properties on the perimeter of the saltmarsh for buffer zones. If these measures were to be implemented the Corps might then concentrate its efforts on flood-proofing public facilities such as the MBTA. 7

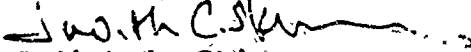
Option 2 has the advantage of being implementable immediately or within a very short time without the huge commitment of State and Federal funds which can hardly be envisioned in the existing financial climate.

In summary, despite revisions which have been made in the flood-gate proposal, Option 3, MACC supports the non-structural alternative which has no environmental impacts and which would put responsibility for flood control largely on the local communities where it belongs. MACC also strongly urges that no additional funds be committed to this flood-gate project until the State develops an environmentally sound, equitable and co-

herent plan for dealing with coastal areas subject to flooding both under present conditions and in the event of an increased rate of sea-level rise. We fear that the flood-gate project, if presently implemented will set a very unfortunate precedent for other estuarine salt marsh areas, especially ACECs and could result in a demand for "hard" flood control measures throughout the coastline. We suggest that the State policy be developed through the mechanism of a GEIR. E

We appreciate the opportunity to submit these comments.

Sincerely yours,,


Judith C. Skinner

Board member, MACC

cc: MDEP, Wetlands Div.

MCZM

MDEM, Water Resources

EPA, Region I, Wetlands Div.

USF&WL

Rep. Mavroules

Sen. Boverini

Rep. Angelo

Cons. Comms. of Saugus, Revere, Lynn, Malden



CITY OF LYNN
PLANNING BOARD

CITY HALL ROOM 106
LYNN, MASSACHUSETTS
01901

February 6, 1990

RECEIVED
FEB 7 1990
MEPA

Director
Washington Level Review Center
Casey Building
Fort Belvoir, Virginia 22060-5586
REFERENCE: CWIS No. 14021

Dear Sir:

Please accept the following Comments on the Final Report entitled Water Resources Investigation-Feasibility Report and Final Environmental Impact Statement and Environmental Impact Report, Saugus River and Tributaries, Flood Damage Reduction Study, Lynn, Malden, Revere and Saugus Massachusetts. These comments have been prepared as a result of my review of these documents as the Study Coordinator for the City of Lynn Citizens' Steering Committee and as our community representative on the Technical Group and are hereby submitted on behalf of the City of Lynn.

Dikes and Walls - Lynn Harbor

There have been two significant changes directly related to this element of the recommended plan incorporated into the final document since its draft review. Both changes involve the proposed location of the earth-filled dike and stone slope protection system.

The City of Lynn concurs with the revised recommendation to construct the proposed dike inland of the toe of the bulkhead or shorefront. The revised location is consistent with Federal, State, and local policy, provides for maximum benefit of protection for existing upland uses within the Lynnway area, and remains consistent with local plans and policy towards future development within the impacted area. I urge the Corps to pursue the construction of the Lynn Harbor dike system in this location.

The City of Lynn cannot support a final recommended plan that includes an option to relocate the proposed southern 2,800 feet of the Lynn Harbor dike system 300 feet inland from the existing bulkhead. As repeatedly stated within the Feasibility Report, the recommended plan has earned a wide base of community support as a result of four years of directed effort in public involvement. It is inconceivable that this Corps would compromise this cooperative effort by incorporating an eleventh hour change of this magnitude without any consideration towards further consultation with the local community.

B6,

I respectfully request that the final recommended plan be modified to delete this option or that the Chief of Engineers report be withheld and the MEPA review period extended until this significant change can be fully discussed before our Citizens Steering Committee.

If, for any reason, these requests cannot be satisfied, I will recommend that the City of Lynn's support for the Regional Saugus River Floodgate Plan be withdrawn.

Sincerely,



Stephen L. Smith
Assistant Planning Director

SLS/jlc

cc: Mr. David Shepardson, EOEA/MEPA Unit
Albert V. DiVirgilio, Mayor, City of Lynn

SAUGUS ACTION VOLUNTEERS FOR THE ENVIRONMENT

24 Emory St.
Saugus, Massachusetts 01906

To: David Shepardson
EOEA / MEPA UNIT
100 Cambridge St., 20th fl.
Boston, Ma.

January 25, 1990

JAN 29 1990

SEP 1

Subject: Saugus River Floodgate Plan (File # 6497)

Dear sir,

The Saugus Action Volunteers for the Environment (S.A.V.E.) would like to reconfirm our former endorsement (letter dated August 5, 1989) for the Saugus River Floodgate Plan. However, we would like to add a few additional comments.

Our organization has a membership of ninety and is the largest of its type in Saugus. The main priority of our group is the preservation of wetlands, and the group started when development threatened the marshes along Route 107 in the mid sixties. It is only after careful study that we have reached the conclusion that building the floodgate would have no measurable negative impact on the marsh but would give us some positive protections to the wetland area.

When the Army Corps first proposed this project it brought for the first time an indepth study of the marsh ecosystem. They also were instrumental in citing illegal violations of filling in the area in both Saugus and Revere. Before this there was scant enforcement in this area by either local, state or federal authorities. If the project is built , fulltime monitoring of the marsh area for illegal fill and development would occur. This is something that would not happen if the project was not approved. In fact, we have lost wetlands in the past in the Saugus River tributary when the old State DEQE Dept. has overruled our local conservation board and stated that the ocean can be used as compensory storage for flood control.

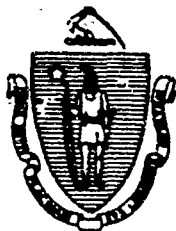
In addition, 1650 acres of marshland would be bought and protected for use as retention areas in conjunction with this project. This is the type of absolute protection the marsh needs and deserves.

This project would also make it more politically palatable to study the complete removal of the remainder of the I-95 road embankment. The remains of this abandoned road bed are the real threat to the marsh wetlands west of it. The erosion of the bank is filling in areas adjacent to it and the road bed retards flushing of the marsh behind it. This "sand pile" is a much greater threat to the marsh than the floodgate project.

With these items in mind, S.A.V.E. would like to see M.E.P.A. approval of the project.

Sincerely,

Richard Mytkowicz
Richard Mytkowicz
President S.A.V.E.



The Commonwealth of Massachusetts

*Division of Marine Fisheries
Leverett Saltonstall State Office Building
100 Cambridge Street
Boston, Massachusetts 02202*

727-3193

PHILIP G. COATES
DIRECTOR

Mr. David Shepardson
EOEA/MEPA Unit
100 Cambridge St., 20th floor
Boston, MA. 02202

February 6, 1990

Reference: EOEA File No. 6497

RECEIVED

FEB 9 1990

MEPA

Dear Mr. Shepardson:

The Massachusetts Division of Marine Fisheries has reviewed the Feasibility Report and Final Environmental Impact Statement/Report for Flood Damage Reduction in the Saugus River and Tributaries. The FEIS/FEIR adequately describes marine fishery resources in the study area. Potential impacts to adult finfish are adequately addressed. The projected alterations to estuarine hydrology, resulting from introduced structures, are not expected to impede the migration and movements of adult finfish. The potential impacts to early life stages of finfish and shellfish were addressed, but because of uncertainty in predicting effects on larval transport major concerns persist. There is also remaining concern over the loss of three acres of shellfish habitat resulting from structures built under the Regional Saugus River Floodgate Plan (Option 3). Because of these two areas of concern, DMF does not support the Army Corp's conclusion that Option 3 will result in no significant environmental impacts to marine resources.

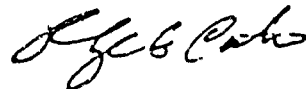
The Saugus and Pines River estuary provides essential spawning and nursery habitat for many species of finfish and shellfish. These natural habitats have been encroached upon by decades of urban development, and consequentially, acres of habitat have been degraded or lost. The introduction of structures proposed in Option 3 is inconsistent with marine resource management objectives of avoiding development in estuaries. The flood damage reduction structures offered in Option 3 create potential for long-term ecological impacts within the estuary. Specifically, the floodgate may impose excessive mortality to planktonic eggs and larvae by physical damage and disruption of transport processes. Potential impacts could also occur from subtle changes in upper estuary habitat where the salt wedge meets the freshwater zone. These impacts could be compounded by increased floodgate operations,

as projected under future conditions of sea-level rise. Rainbow smelt are an example of a Saugus River population that depend on the dynamics of tidal and water shed flushing for spawning success and passive larval transport. The sportfishery for smelt in the Saugus River has declined markedly in the past decade. Any impacts that may alter smelt spawning habitat should be avoided. It is understood that projections of potential impacts to estuarine ecology are difficult to quantify. This is a situation where caution should be exercised in the interest of preserving natural characteristics of the estuary.

The Army Corps has made responsible attempts to accommodate concerns over loss of intertidal and subtidal habitat loss. The total loss of such habitat has been reduced from ten to three acres for the FEIS/FEIR, along with plans to mitigate the three acre loss with the creation of 6.5 acres of shellfish habitat near Sea Plane Basin. Given the long history of development in the Saugus and Pines River tidelands, the loss of further shellfish habitat is unacceptable to State resource management objectives. As a policy, DMF does not support any coastal alteration project that results in the destruction of shellfish habitat.

In conclusion, DMF opposes the Regional Saugus River Flood-gate Plan as described and recommended by the Army Corps in the FEIS/FEIR. DMF does not object to alternatives of flood damage control that use features of the non-structural plan (Option 2) and Option 3. A combination of waterfront revetments and seawalls and flood plain planning may prove to be an acceptable alternative to the risk of creating wide-ranging ecological impacts in the Saugus and Pines River.

Sincerely,



Philip G. Coates
Director, DMF

cc: Army Corps, Washington Level Review Center

B8₂

The City of Revere Massachusetts



City Council

4 PUTNAM ROAD
REVERE, MA 02151

280-4444 280-2121

JOHN ARRIGO
COUNCILLOR

RECEIVED

FEB 8 1990

MEPA

Mr. David Shepardson
EOEA/MEPA Unit
100 Cambridge Street, 20th Floor
Boston, MA. 02202

Reference Number: EOE File #6497
Floodgate Project

Dear Mr. Shepardson:

Attached are my comments relative to the Final Impact Report for the Saugus River and Tributaries Flood Protection Plan that I submitted to the Washington Level Review Center.

Also, please include these comments into your MEPA Review.

Thank you for your consideration.

Respectfully,

John R. Arrigo
Revere City Council

The City of Revere Massachusetts



City Council

4 PUTNAM ROAD
REVERE, MA 02151
289-6444 286-2321

JOHN ARRIGO
COUNCILLOR

February 2, 1990

Director
Washington Level Review Center
Casey Building
Fort Belvoir, Virginia 220-5586

Reference: CWIS No. 14021

Dear Director:

As the City Councillor representing the Point of Pines, Riverside, Oak Island, Kelly Meadows, and a section of Revere Beach Boulevard, I have reviewed the Water Resources Investigation Feasibility Report and the Final Environmental Impact Report for the Saugus River and Tributaries Flood Protection Plan, and I am very supportive of the Regional Floodgate Plan (Option #3). This plan, as proposed, offers the most protective measures to prevent the devastation of previous years when coastal storms ravaged the low-lying areas of Malden, Lynn, Saugus, and Revere.

Of particular concern is the additional support I would like to offer concerning the planned acquisition of 1650 acres of water storage areas in the Saugus and Pines River estuary, which I believe is an essential ingredient to preserve and protect these valuable environmental resources.

Other concerns and comments I would like to offer are as follows:

The inclusion of the ponding areas between North Shore Road and Revere Beach from Revere Street to the Point of Pines in the land acquisition plan. 1

The Point of Pines Beach must remain under the ownership and control of the Point of Pines residents and its Beach Association, as they have always made certain to maintain and preserve their coastal area to the highest of standards. (easements can be granted for maintenance) 2

A closer alignment to the pumping station, and without the dike (possible continuation of the wall with extensive landscaping) to maintain as much of the recreation beach area as possible. 3

Sand dunes reconstructed without structural revetment underneath. (all sand replenishment) Also, if any outside 4

B9₂

The City of Revere Massachusetts



City Council

4 PUTNAM ROAD
REVERE, MA 02151
289-0444 286-2121

JOHN ARRIGO
COUNCILLOR

February 2, 1990
Pg. 2
CWIS No. 14021
Floodgate Project

source of replenishment is necessary, the quality of sand should be approved by the City of Revere.

Strict assurance that no additional wall structures will block the view of the beach. 5

Extensive landscaping, boardwalk construction, and dune grass replenishment along the entire project with the approval of the residents. 6

No heavy equipment operation or construction past 5PM or before 9AM, or on weekends. 7

Dredging and cement lining of the Eastern County Ditch to allow the proper flow of drainage for the Kelly Meadows, Bay Road, and Oak Island Areas. 8

Written assurance that flood insurance will no longer be required by the residents. 9

Pre-approved plans of routes of travel of construction equipment and/or vehicles during all phases of construction to insure all safety precautions will be taken. 10

An accessible line of communication to address any immediate concerns of the residents during all phases of construction and operation. And further, periodic notices sent to Point of Pines residents notifying them of construction phases to be done, and a timetable and scheduling outline, previous to and during construction of the project. 11

The delineation of the entire wetlands accurately, and the distribution to all the cities and towns the appropriate maps and information. 12

The assurance that all infractions pertaining to the illegal fill of wetlands will be strictly dealt with. 13

Last, and one of the most important comments I would like to make is to have the Floodgate, itself, and all operations remain under the control and jurisdiction of the Army Corps of Engineers. 14

B9₃

The City of Revere Massachusetts



City Council

4 PUTNAM ROAD
REVERE, MA 02151
289-6444 286-2321

JOHN ARRIGO
COUNCILLOR

February 2, 1990
Pg. 3
CWIS No. 14021
Floodgate Project

Although plans have been made to have funds in escrow accounts for maintenance and operation by the State and/or the M.D.C., much concern lies with the fact many state projects are very much neglected or under-funded when long term care is necessary. 15

Hopefully, my comments and concerns will be taken into consideration when the proposal is reviewed by your agency.

Respectfully,

John R. Arrigo
Revere City Council

pc: D. Shepardson, EOE/MEPA Unit
Colonel Wilson, Corps of Engineers
R. Hunt, Corps of Engineers
Mayor Colella
Senator Doris
Representative Reinstein
F. Stringi, Planning



GEORGE V. COLELLA
MAYOR

THE CITY OF
REVERE, MASSACHUSETTS
—
OFFICE OF THE MAYOR
CITY HALL

RECEIVED
JAN 26 1990
REPL

January 25, 1990

Mr. Daniel Shepardson
EOEA/MEPA Unit
100 Cambridge Street
20th Floor
Boston, Massachusetts 02202

RE: EOEA File # 6497

Dear Mr. Shepardson:

This Office, in conjunction with the City's Department of Planning and Community Development, has reviewed the Water Resources Investigation Feasibility Report and Final Environmental Impact Report for the Saugus River and Tributaries Flood Protection Plan.

The Regional Floodgate Plan, as proposed, with associated shore front protection in the Point of Pines and Revere Beach area will provide the highest level of flood protection to the Point of Pines and back shore areas of Revere, Malden, Saugus and Lynn. The plan in general is strongly supported by the City of Revere. We will continue to work with the Corps of Engineers to finalize mitigation measures within the area most impacted by the plan, which is the Point of Pines section of Revere.

Specific plans must be worked out for haul routes during construction activity as well as security and screening measures to be undertaken during and after construction in the abutting residential neighborhood.

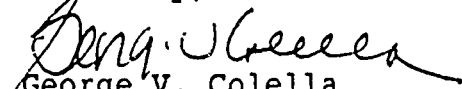
Some of the objectives in which the City of Revere is seeking to achieve and wishes to see incorporated into the proposed plan include; alternative flood protection measures which are non-structural along the shore front area of the Point of Pines, such as dune restoration and sand replenishment in lieu of an armor stone revetment; minimizing the loss and

B10,

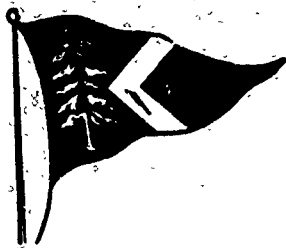
disruption of upper beach and tidal areas at the mouth of the Point of Pines and Saugus River estuary; extensive landscaping and screening measures to soften the visual impacts of the floodgate structure from the adjacent residential neighborhood; the construction of walkways to improve access to the shorefront along Rice Avenue adjacent to the shoreline protection and as a means of protecting the sand dunes which are critical component of the plan; and the adoption of a strict maintenance and operational program for the proper management of all the features of the plan.

The City of Revere will continue to work with the Corps to insure that the proper mitigation measures are built into the design in order to provide the highest degree of flood protection with the least degree of environmental and social impact.

Sincerely,


George V. Colella
Mayor

c: Frank Stringi
DPCD Director



Point of Pines Yacht Club, Inc.

28 RICE AVENUE, REVERE, MASS. 02151

Telephone 284-9717

RECEIVED

JAN 31 1990

12574

JANUARY 23, 1990
Washington Level Review Center
Casey Building
Fort Belvoir, Virginia 22060-5586
Reference: CWIS No. 14021

I would like to offer some comments to the flood damage reduction study project. We welcome this wall as it was originally planned. It offers protection to our club and boats during N-East storms, however we have some concerns with some changes that have been made since last meeting.

On your latest report you show the wall having moved closer to our yacht club. It is connecting to land at Bateman avenue now. This is at the end of our property right to the right of the pumping station which is on an easement that we gave the city. The city is in the process of installing a pipe from this pumping station that will be either under the wall or very close to it. The second problem is that this wall interferes with the navigation of our boats within our marina. One other problem is that you are creating a "Y" with these two walls connection, as I am showing in the drawing that I am including with this report.

This wall would be much more effective if it connected at the very point of point of pines land. I would appreciate it if you look at my concern very closely and if I can be of any help please contact me at any time.

I would like to be kept on your steering committee on this project.

THOMAS
Emery Richard
Commander

cc: Mr. David Shepardson
Mr. Robert G. Funt
Mr. Daniel H. Wilson

B11,

Figure 5

Floodgate Structure, Navigation And Flushing Gates

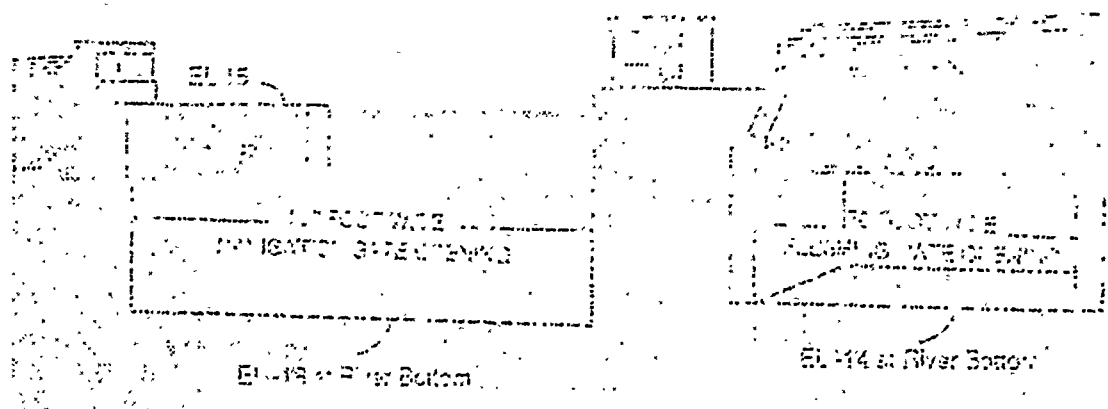
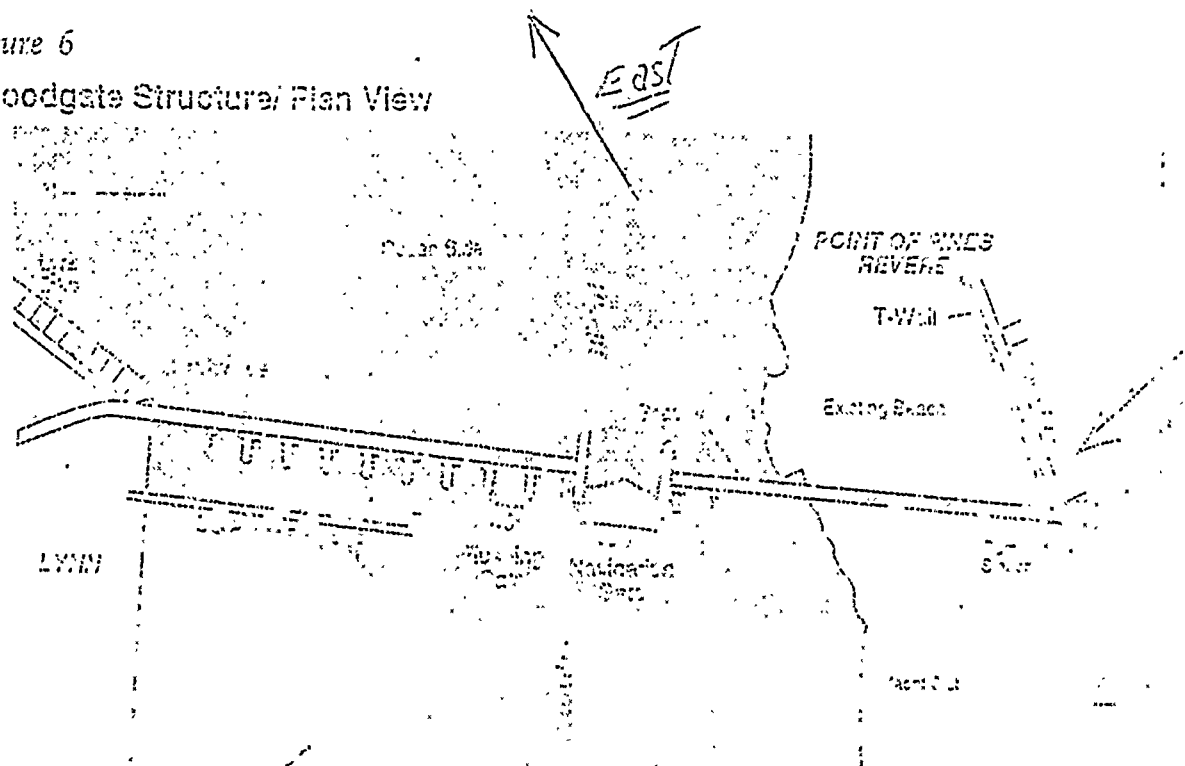


Figure 6

Floodgate Structure/ Plan View





**The Commonwealth of Massachusetts
Metropolitan District Commission
M. Ilyas Bhatti, Commissioner**

**20 Somerset Street
Boston, MA 02108
617-727-5114**

RECEIVED

FEB 14 1990

February 9, 1990

MEPA

Ms. Janet McCabe, Assistant Secretary
Executive Office of Environmental Affairs
MEPA Unit
100 Cambridge Street - Room 2000
Boston, MA 02202

RE: Saugus Flood Reduction Study; EOE #6497

Dear Ms. McCabe:

The Metropolitan District Commission (MDC) is pleased to have this opportunity to comment on the above-referenced Final Environmental Impact Report (FEIR).

The nature and scope of this project makes it extremely important that all of its options are examined carefully. It is our opinion that, while this project may have significant future benefits to those in its area, there remain many unanswered questions and many unresolved issues. These questions and issues should be resolved before this project, in whatever form it takes, can proceed. It should be borne in mind that the MDC is to be the state sponsor for this project and, as such, most of the burden for the operation and management of the completed facility and protected estuary will fall to MDC. Therefore, the MDC requests that the proponent examine the need for filing a Supplemental Final Environmental Impact Report (SFEIR) for this project.

EXAMINATION OF OPTIONS

Sea level rise will affect more than the floodgates. Mitigation for sea level rise should be included in all flood protection features of the project. Under the proponent's preferred alternative, retrofitting appears to be the responsibility of the MDC. If the floodgates can be retrofitted, can the sea walls be retrofitted? Who will bear the cost of retrofitting the seawalls?

MAINTENANCE AND OPERATION

The proponent should specifically detail all responsibilities for operation and maintenance (O&M) of the required mitigation features. The manpower and equipment needs, duration of time needed to maintain any mitigation, the responsibility for mitigative success or failure, need to be clearly defined.

The proponent should also examine the O&M of all appurtenant minor structures, including flap valves/tide gates, municipal storm drain

B12,

MetroParks

MetroParkways

MetroPolice

PureWater

lines/outfalls, or stop log structures for waterfront public access, when these structures occur on private and/or city/town-owned lands. The proponent should examine both municipal and private responsibility for these. As part of said examination, the proponent should, as a minimum, propose language within a draft deed which includes these responsibilities.

The overall O&M cost of \$220,000 annually appears low. If taken as a percentage of the project's total estimated cost, this figure amounts to approximately .26%, which is quite low for this type of project. The MDC requests that the proponent reexamine and reestimate the O&M cost of this project. The MDC will be the project sponsor and any funding issues must be resolved before the MDC will take on that responsibility.

The proponent should also examine a way of establishing the necessary taking lines for the estuary storage area.

Also, the proponent must examine the use of and funds for a Natural Resource Manager position to be implemented for this project. The floodgate can also be regarded as an engineering solution which protects a damaged natural environment. That is, due to the filling that has already occurred, there is an environmental danger to the marsh from this and any other future filling. The Natural Resource Manager would be responsible for monitoring damage and impacts to the marsh and floodplain and should be an environmental specialist. A new MDC reservation (made from estuary and floodplain) could be created by MDC. The Natural Resource Manager would then be responsible for this Reservation, with duties thus more easily defined and controlled. Creating a Reservation would also afford the greater level of environmental protection that all of our reservations now enjoy.

VISUAL IMPACTS/RESPONSIBILITY

Point of Pines revetment and dune stabilization calls for landward landscaping, walkways, sand fencing, and establishment of beach grass. Have the plans for these been clearly delineated?

The visual impact of a dike and flood gate barrier being 7-14 feet higher than Rice Road will be significant. Have the local residents been consulted as to their opinions about these visual impacts? A design or architectural rendering of the flood gate barrier should be provided for any interested parties.

CORRECTIONS

FEIR Main Report- Section 2

a. Pg. 66: Reference is made that the Town Line and Linden Brook flood control project will cause a loss of intertidal habitat. This is incorrect and should not be categorized with other projects that will impact intertidal habitat.

b. Pg. 71: The reference to Route 93 in the last line of the first paragraph appears to be incorrect.

c. Pg. 94: The reference in the first sentence to Wonderland Station as a commuter rail system is incorrect. It is actually a part of the MBTA's Blue Line rapid transit system.

GENERAL ISSUES

The issue of some party bearing responsibility for monitoring development on the floodplain once the project is in place should be settled before this project can go forward given a current lack of municipal zoning to prevent it. Similarly, the issue of MDC and municipal responsibility has yet to be clearly delineated both in word and through ordinance. The proponent must continue to work with both municipalities and state agencies in order to delineate both financial and technical responsibilities for the project.

Thank you for this opportunity to comment.

Sincerely,



M. ILYAS BHATTI
COMMISSIONER

cc: N. Baratta
F. Faucher
H. Higgott
P. DiPietro
C. Terzian
J. Benoit, CZM
J. O'Connell, CZM

SECTION C

**LETTERS RECEIVED BY WASHINGTON LEVEL REVIEW CENTER IN
RESPONSE TO DIVISION ENGINEER'S PUBLIC NOTICE**



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
Atlanta GA 30333
January 25, 1990

Director
Washington Level Review Center
Casey Building
Fort Belvoir, Virginia 22060-5586
Reference: CWIS No. 14021

Dear Sir:

We have completed our review of the Final Water Resources Investigation-Feasibility Report and Final Environmental Impact Statement and Environmental Impact Report, Saugus River and Tributaries, Flood Damage Reduction Study, Lynn, Malden, Revere and Saugus, Massachusetts. We are responding on behalf of the U.S. Public Health Service.

The Option 3's floodgate structure and its proposed operation, as reported, would reduce flooding of 5,000 buildings plus all major transportation arteries serving the Study Area. In addition, the project has been specifically designed for no significant adverse impacts on the estuary and navigational safety. We concur with the need for this project and with the preferred option 3. The provision for a full time environmental enforcement manager and a public awareness program will be extremely beneficial in implementing the proposed plan.

Thank you for the opportunity to review this document. Please insure that we are included on your mailing list for further documents which are developed under the National Environmental Policy Act (NEPA).

Sincerely yours,

Kenneth W. Holt, M.S.E.H.
Environmental Health Scientist
Center for Environmental Health
and Injury Control



United States
Department of
Agriculture

Soil
Conservation
Service

451 West Street
Amherst, MA 01002
Tel. (413) 256-0441

January 31, 1990

Col. Daniel M. Wilson
N.E. Division
Corps of Engineers
424 Trapelo Road
Waltham, MA 02254-9149

Dear Col. Wilson

We have no comments on the final report entitled "Water Resources Investigation-Feasibility Report and Final Environmental Impact Statement and Environmental Impact Report, Saugus River and Tributaries, Flood Damage Reduction Study, Lynn, Malden, Revere and Saugus, Massachusetts."

Sincerely,

REX O. TRACY
State Conservationist

C9



The Soil Conservation Service
is an agency of the
Department of Agriculture



Division of Fisheries & Wildlife

Wayne F. MacCallum, Director

February 14, 1990

Director
Washington Level Review Center
Casey Building
Fort Belvoir, Virginia 22060-5586

RE: CWIS No. 14021

Dear Sir:

We apologize for the tardiness of this response to your request for comments on the proposed Saugus River Flood Damage Reduction Study in Massachusetts.

Our major concern at this point in time is to provide adequate protection for the waters and lands behind the proposed flood gates. We believe the Corp is wrong in its assessment that economic development in the impact area will be independent of whether or not a flood gate is built. Although proposed development projects may eventually exist, the likelihood of their eventual completion will be much greater if the flood gates are installed.

To this end, we believe the best way to protect wildlife habitat in the area is to protect the lands and waters of the Saugus River and its tributaries through acquisition or easements. The establishment of a Saugus River National Wildlife Refuge through National Wetlands Protection Act funds may be one means of accomplishing this.

Sincerely,

A handwritten signature in dark ink, appearing to read "H W Heusmann".

H W Heusmann
Waterfowl Biologist

cc: David Shepardson
EOEA/MEPA Unit

C//

Division of Fisheries & Wildlife

Field Headquarters, One Rabbit Hill Road, Westboro, MA 01581 (508) 366-4470

An Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement



COASTAL ZONE
MANAGEMENT

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

March 1, 1990

Ms. Beverly Boyle
State Clearinghouse Coordinator
MA EOCD - Room 1803
100 Cambridge Street
Boston, MA 02202

Dear Ms. Boyle:

With this letter the Massachusetts Coastal Zone Management Office submits comments to the Army Corps of Engineers, New England Division on the Feasibility Report and Final Environmental Impact Statement/Report for Saugus River and Tributaries, Lynn, Malden, Revere and Saugus, MA - Flood Damage Reduction, as noticed in the January 23, 1990 MA Intergovernmental Review Monitor. The attached comment letter was issued to the Massachusetts MEPA Unit of the Executive Office of Environmental Affairs in response to notice of the same study in the January 12, 1990 Environmental Monitor; the same concerns apply.

Thank you for the opportunity to comment on this report.

Sincerely,

Jeffrey R. Benoit
Jeffrey R. Benoit
Director

JRB/JA/ag .

Attachment: See CZM letter dated
12 Feb 90, submitted to MEPA, and
referenced in the 20 Feb 90 Certificate
from Sec. EOEA.

SECTION D

FINAL REPORT TRANSMITTAL AND PUBLIC NOTICES



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254

REPLY TO
ATTENTION OF

December 29, 1989

Planning Division
Impact Analysis Branch

Mr. John DeVillars
Secretary of Environmental Affairs
100 Cambridge Street - 20th Floor
Boston, Massachusetts 02202

Dear Mr. DeVillars:

The New England Division, Corps of Engineers, is pleased to submit the enclosed Final Environmental Impact Statement/Report for the Saugus River and Tributaries, Flood Damage Reduction Study on behalf of the communities of Lynn, Malden, Revere, and Saugus, Massachusetts. Upon completion of your review and issuance of your certificate on the acceptability of the Final Environmental Impact Report (FEIR) we will forward the certification to our Washington office for inclusion in their review prior to submission to Congress.

Additionally, in order to process the report our Washington office requires a separate written indication from you that the project is expected to be consistent with the Commonwealth's Coastal Zone Management Program and eligible for receipt of a Water Quality Certificate under Section 401 of the Clean Water Act. We discussed these requirements with your responsible agencies at our November 29, 1989 meeting.


We realize a Coastal Zone Consistency Determination concurrence and issuance of the Water Quality Certificate cannot be made at this time because of the Commonwealth's procedures for these programs. However, at a minimum, we need a statement that the Commonwealth supports the project and expects the project can be consistent and a water quality certificate can be issued during the design phase. This will meet our agencies requirements and allow Pre-construction Engineering and Design to proceed.

We request therefore that upon issuance of your certificate on the FEIR you also address the likelihood of the project being consistent with the Coastal Zone Management Program and eligible for receipt of Water Quality Certification. Finally, we request a summary of any variance procedures your agency will be requiring before project implementation.

DI,

The Corps looks forward to continuing work with the Commonwealth on this project and preparing final plans and design. If you have any questions, please feel free to call me at (617) 647-8220 or Mr. Robert Hunt, the Study Manager at (617) 647-8216.

Sincerely,



Daniel M. Wilson
Colonel, Corps of Engineers
Division Engineer

Enclosure 3

Copy Furnished:

Mr. James O'Connell
Office of Coastal Zone Management
100 Cambridge Street
Boston, Massachusetts 02202

Mr. David Sheapardson
MEPA Unit
100 Cambridge Street
Boston, Massachusetts 02202

January 8, 1990

Planning Division
Basin Management Branch

Honorable Michael S. Dukakis
Governor of the Commonwealth of Massachusetts
Boston, Massachusetts 02133

Dear Governor Dukakis:

I am pleased to provide the enclosed Final Report entitled Water Resources Investigation-Feasibility Report and Final Environmental Impact Statement and Environmental Impact Report, Saugus River and Tributaries, Flood Damage Reduction Study, Lynn, Malden, Revere and Saugus, Massachusetts. The report is also provided on behalf of the state sponsor, the Metropolitan District Commission, and the sponsoring communities of Lynn, Malden, Revere and Saugus, Massachusetts. Also enclosed is a Public Notice that the report has been transmitted to the Washington Level Review Center. The Notice is being provided to the media and the public.

The report culminates four years of investigating the coastal flooding problems and resources in the communities, and selects for implementation a Regional Plan. The plan would provide a very high degree of coastal flood protection to 5000 residential, commercial and industrial buildings in these communities, reduce damages to major north shore utilities, and reduce disruption to regional public transportation. The plan also includes parkland for public recreation and provides for a safer port of refuge for the 400 vessel fleet using the waterways. Protection of the natural flood water storage capacity in the Saugus and Pines Rivers estuary through acquisition of a real estate interest in 1650 acres is also a feature of the plan which would help preserve its valuable environmental resources.

I would appreciate any comments you have on the report and the selected plan sent by February 9, 1990 directly to the Director, Washington Level Review Center, Casey Building, Fort Belvoir, Virginia 22060-5586 (Reference CWIS No. 14021). Comments may also be provided for the State review process. The official closing date is 30 days from the date on which the Notice of Availability for the Environmental Impact Report appears in the Environmental Monitor. With the Notice expected to be published on January 10, the closing date is expected to be February 9, 1990. As part of the Massachusetts environmental review process, I would appreciate copies of your comments sent to: Mr. David Shepardson, EOE/MEPA Unit, 100 Cambridge Street, 20th Floor, Boston, Massachusetts 02202. (Reference: EOE File Number 6497).

D2,

I appreciate your interest in this study. If you or your staff have any questions regarding this report, please feel free to call me at (617) 647-8222, or the Project Manager, Mr. Robert G. Hunt (647-8216).

Sincerely,

Daniel M. Wilson
Colonel, Corps of Engineers
Division Engineer

Enclosures

Similar Letters to:

*Senators Kennedy and Kerry, and
Congressmen Markey and Mavroules.*

DZ₂



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

REPLY TO
ATTENTION OF

January 8, 1990

Planning Division
Basin Management Branch

Mr. Ilyas Bhatti, Commissioner
Metropolitan District Commission
20 Somerset Street
Boston, Massachusetts 02108

Dear Mr. Bhatti:

I am pleased to provide the enclosed Final Report entitled Water Resources Investigation-Feasibility Report and Final Environmental Impact Statement and Environmental Impact Report, Saugus River and Tributaries, Flood Damage Reduction Study, Lynn, Malden, Revere and Saugus, Massachusetts. The report has been sent out for public distribution on your behalf as the state sponsor and the sponsoring communities of Lynn, Malden, Revere and Saugus, Massachusetts. Also enclosed is a Public Notice that the report has been transmitted to the Washington Level Review Center. The Notice is being provided to the media and the public.

The report culminates four years of investigating the coastal flooding problems and resources in the communities, and selects for implementation a Regional Plan. The plan would provide a very high degree of coastal flood protection to 5000 residential, commercial and industrial buildings in these communities, reduce damages to major north shore utilities, and reduce disruption to regional public transportation. The plan also includes parkland for public recreation and provides for a safer port of refuge for the 400 vessel fleet using the waterways. Protection of the natural flood water storage capacity in the Saugus and Pines Rivers estuary through acquisition of a real estate interest in 1650 acres is also a feature of the plan which would help preserve its valuable environmental resources.

I would appreciate any comments you have on the report and the selected plan sent by February 9, 1990 directly to the Director, Washington Level Review Center, Casey Building, Fort Belvoir, Virginia 22060-5586 (Reference CWIS No. 14021). Also needed is a Letter of Intent that the Commonwealth would meet the items of local cooperation summarized in the main report. This letter is needed due to changes in the final report which were discussed with your staff on November 29, 1989, including, acquisition of a real estate interest in the estuary storage area, a reduction of intertidal impacts and a smaller mitigation site. Comments may also be provided for the State review process. The official closing date is 30 days from the date on which the Notice of Availability for the Environmental Impact Report appears in the Environmental Monitor. With the Notice expected to be published on January 10, the closing date is expected to be February 9, 1990. As part of the Massachusetts environmental review process, I would appreciate copies of your comments sent to: Mr. David Shepardson, EOE/MEPA Unit, 100 Cambridge Street, 20th Floor, Boston, Massachusetts 02202, (Reference: EOE File Number 6497).

D3,

-2-

I appreciate your interest and help in this study. If you or your staff have any questions regarding this report, please feel free to call me at (617) 647-8222, or the Project Manager, Mr. Robert G. Hunt (647-8216).

Sincerely,

A handwritten signature in dark ink, appearing to read "Daniel M. Wilson", with a stylized, flowing script.

Daniel M. Wilson
Colonel, Corps of Engineers
Division Engineer

Enclosures

D3₂



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

January 8, 1990

Planning Division
Basin Management Branch

DEAR INTERESTED PARTY:

The New England Division, Corps of Engineers is providing, for your comments, the enclosed Final Report entitled Water Resources Investigation-Feasibility Report and Final Environmental Impact Statement and Environmental Impact Report, Saugus River and Tributaries, Flood Damage Reduction Study, Lynn, Malden, Revere and Saugus, Massachusetts. The Corps is pleased to provide the report on behalf of the state sponsor, the Metropolitan District Commission, and the sponsoring Communities of Lynn, Malden, Revere and Saugus, Massachusetts. The report has been forwarded for the Washington Level Review as described in the enclosed Public Notice.

The report culminates four years of investigating the coastal flooding problems and resources in the communities, and recommends for implementation a Regional Plan. The plan would provide a very high degree of coastal flood protection to 5000 residential, commercial and industrial buildings in these communities, reduce damages to major north shore utilities, and reduce disruption of regional public transportation. The plan also includes park land for public recreation. Protection of the natural flood water storage area in the Saugus and Pines Rivers estuary through acquisition of a real estate interest in 1650 acres is also a feature of the plan which would help preserve its valuable environmental resources.

Your comments on the final report and the recommended plan are invited during the 30 day Washington review ending February 9. For the state MEPA review, the official closing date is 30 days from the date on which the notice of availability for the Environmental Impact Report appears in the Environmental Monitor. With the Notice expected to be published on January 10, the closing date is expected to be February 9, 1990.

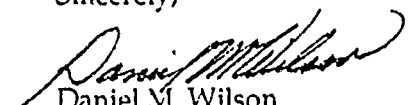
Your comments for the Washington Review should be sent to:

Director
Washington Level Review Center
Casey Building
Fort Belvoir, Virginia 22060-5586
Reference: CWIS No. 14021

A copy of your comments should be provided for the MEPA review process to:
Mr. David Shepardson
EOEA/MEPA Unit
100 Cambridge Street, 20th floor
Boston, Massachusetts 02202
Reference: EOEA File Number 6497

The sponsors and the Corps appreciate your interest in this study. If you have any questions, please feel free to call me at (617) 647-8222, or the Project Manager, Mr. Robert G. Hunt (647-8216).

Sincerely,


Daniel M. Wilson
Colonel, Corps of Engineers
Division Engineer

Enclosures

See attached list in Appendix J.

D4



DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

REPLY TO
ATTENTION OF

JANUARY 9, 1990

Planning Division
Basin Management Branch

**PUBLIC NOTICE
OF TRANSMITTAL OF FEASIBILITY REPORT
AND FINAL ENVIRONMENTAL IMPACT STATEMENT AND REPORT
FOR FLOOD DAMAGE REDUCTION IMPROVEMENTS FOR THE
SAUGUS RIVER AND TRIBUTARIES IN
LYNN, MALDEN, REVERE AND SAUGUS, MASSACHUSETTS
TO THE WASHINGTON LEVEL REVIEW CENTER**

INTRODUCTION - The New England Division, Corps of Engineers, has completed a study to determine the engineering feasibility, economic justification, and environmental acceptability of providing improvements in Lynn, Malden, Revere and Saugus, Massachusetts to reduce coastal flood damages in the vicinity of the Saugus River and tributaries. The study was conducted under the authority of a Congressional resolution adopted on September 12, 1969. I found the recommended plan, described below, to be the best solution to the flood problem. I am transmitting the report to the Washington Level Review Center for their review and submittal to the Board of Engineers for Rivers and Harbors for approval.

RECOMMENDED PLAN - I recommend a plan which incorporates 3- miles of existing seawalls, beaches and tide gates with 3.5-miles of proposed walls, dikes, revetments, and dune and beach restoration along the Revere and Lynn shorefronts. I also recommend construction of a floodgate structure across the mouth of the Saugus River and acquisition in fee or easement of about 1650 acres of estuary storage area including a ponding area near the north end of Revere Beach. The floodgate structure spans 1290 feet at the mouth of the Saugus River and includes 600 feet of gated openings so as to maintain both safe passage for navigation and natural tide levels and flushing patterns in the estuary. The plan would result in a 2- acre loss of intertidal and 1-acre subtidal habitat, for which mitigation is planned through the creation of clam flats and subtidal habitat. A flood forecast, warning and evacuation plan would be developed for the communities.

The combined elements of the plan provide protection to over 5,000 structures in the Standard Project Northeaster floodplain and prevent nearly all the damages from coastal flooding in the study area. The plan also provides for improved public recreation, improved protection of the environmental resources in the estuary through acquisition of a real estate interest, and a significant reduction in damages to public transportation, and other infrastructure facilities serving Boston's Nor. Shore.

D5,

The \$88.5 million Regional Plan would have an average annual cost of \$8,990,000 which includes \$230,000 per year for operation, maintenance and major replacements. The plan produces average annual benefits of \$11,390,000, primarily from flood damage reduction. Thus the project's annual net benefits are \$2,400,000, with a benefit to cost ratio of 1.3. Benefits and costs are at 1989 price levels.

CONCLUSION - The recommended Regional Saugus River Floodgate Plan is economically justified and maximizes net economic benefits. The plan is technically feasible, as similar projects have been constructed and operated by the New England Division for more than 20 years. Following the draft review of this document, the state sponsor, the Metropolitan District Commission(MDC), provided a letter supporting the project. Also the MDC indicated that funding would be requested from the state legislature and the Local Cooperation Agreement would be signed at the appropriate time in cooperation with the four sponsoring communities. The cities of Lynn, Malden and Revere and the town of Saugus also provided letters supporting the project and agreeing to meet those items of local cooperation not within the direct control of the MDC. The non-Federal cost of the project is 35.3 percent or \$31,200,000 (includes \$9,200,000 in Real Estate and relocation or alterations to existing utilities). The state sponsor would be required to provide cash contributions estimated at \$22,000,000 during construction which is currently planned for 1994, in addition to meeting the real estate and relocation requirements. Following completion of the project, an estimated \$230,000 per year operation and maintenance cost would be a continuing non-Federal responsibility. The sponsors would also protect the existing flood storage capacity of the estuary by acquisition in fee or easement of the approximate 1650 acre estuary. The Federal Government would finance 64.7 percent or \$57,300,000 of the project cost.

FEDERAL REVIEW AND AUTHORIZATION PROCESS - In accordance with the law and Corps regulations, the Feasibility Report including the Final Environmental Impact Statement and Massachusetts' Environmental Impact Report are being referred for review to the Washington Level Review Center (WLRC) in Fort Belvoir, Virginia. Although the report is identified as "final" at this stage, the documents are under agency review and subject to revision. Interested parties may present written views on these documents to the WLRC.

Written communications should be mailed to Director, Washington Level Review Center, Casey Building, Fort Belvoir, Virginia 22060-5586. Your comments on the final report and the recommended plan are invited during the 30 day review period ending February 9, 1989. If extension of this date is considered necessary, a written request stating reasons and additional time desired should be mailed to the WLRC soon after receipt of this notice. The availability of the NEPA document (Final Environmental Impact Statement) should appear shortly in the Federal Register for a 30 day Public Review.

Copies of information received by mail will not be furnished to other parties. However, such information will be regarded as public information and may be inspected and notations made therefrom by other interested parties in the office of the WLRC. The WLRC will not take final action on the report until after expiration of this announcement or any extension thereof that may be granted and full consideration of all information submitted in response. Prior to adoption of the proposed project, the study evaluations and report findings will be reviewed by the Board of Engineers for Rivers and Harbors, the Chief of Engineers, and the Assistant Secretary of the Army of Civil Works.

The Board of Engineers for Rivers and Harbors was established by the River and Harbor Act of 1902 with a primary function of reviewing feasibility reports and advising the Chief of Engineers. The Board conducts its own independent review and coordinates a review by affected States and other Federal agencies. The Board then provides a recommendation to the Chief of Engineers.

The Chief of Engineers, in turn, reviews the report and recommendations of the Board and forwards a recommendation to the Secretary of the Army. If the Chief's recommendation is significantly different from the recommendation coordinated with the State and Federal agencies, the States and agencies will be afforded an opportunity to comment further prior to submission of the Chief's report to the Secretary.

The Assistant Secretary of the Army, in consultation with the Office of Management and Budget, then establishes the Administration position on whether the proposal should be recommended to the Congress for authorization.


STATE REVIEW - In addition to the Federal Review, the Massachusetts Environment Policy Act (MEPA) review will be conducted over a 30 day period. The period would start with a Notice of Availability of the Environmental Impact Report in the Environmental Monitor. Assuming the notice appears as scheduled on January 10, 1990, the end of the review period would be February 9, 1990. Comments should be sent to Mr. David Shepardson (Reference EOEA 6497) at the Executive Office of Environmental Affairs, MEPA Unit, 100 Cambridge Street, Boston, Massachusetts 02202.

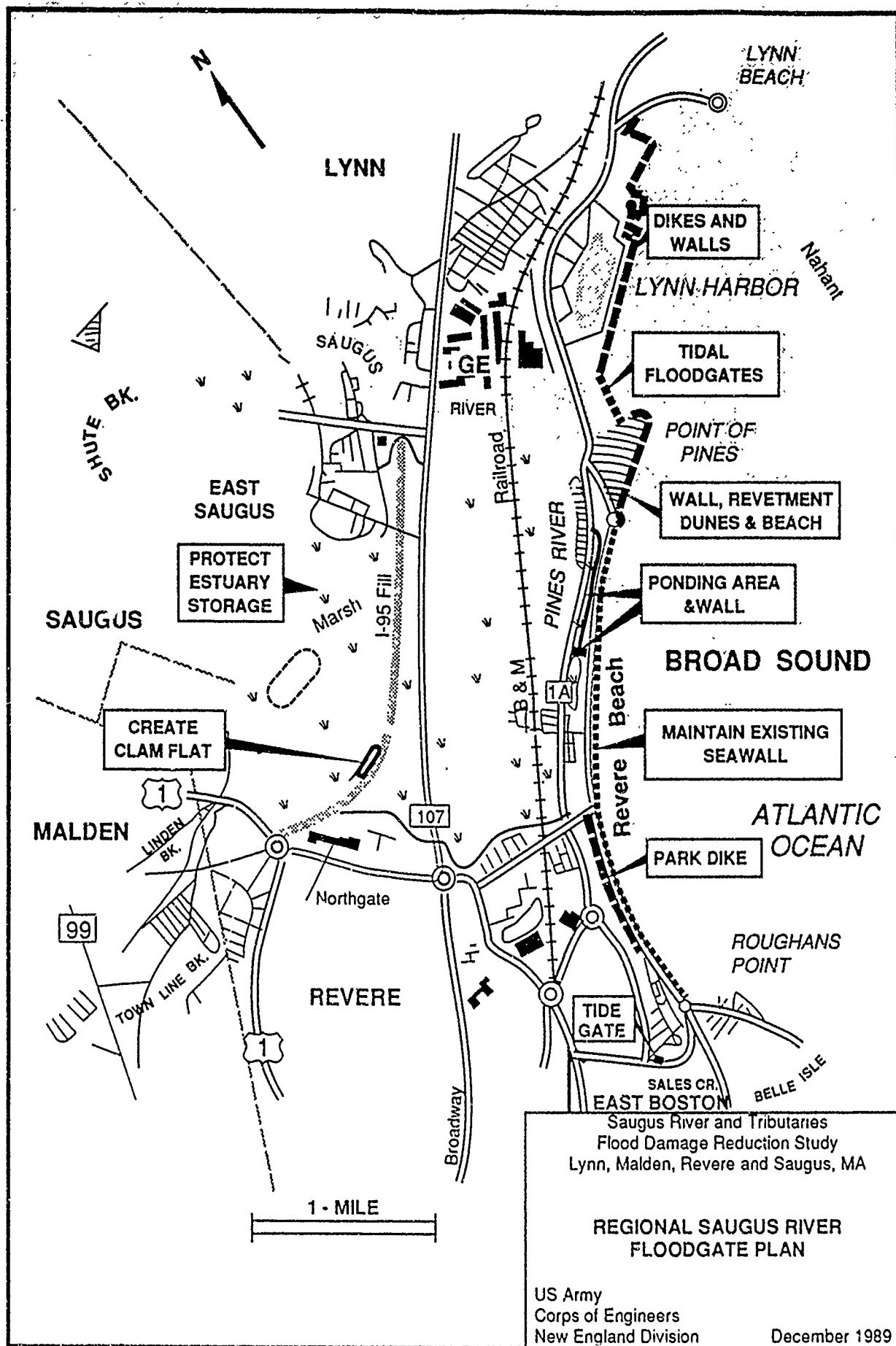
If all reviews find the product to be favorable, Congressional authorization of the proposed project will be required and the report would be submitted to the appropriate Congressional committee for consideration. Congressional procedure normally includes review and hearing by the Public Works Committees and authorization by inclusion in a Water Resources Development Act. Presidential approval of this act concludes the authorizing actions.

COPIES OF REPORT - Further information may be obtained from this office. Copies of the complete Feasibility Report will be available for review at the New England Division Office in Waltham, Massachusetts. As only a limited number of complete reports are available, interested parties may make such notes of the contents of the report as they desire. Copies of the report will not be loaned for use outside the Division office but they may be purchased from: U.S. Department of Commerce, National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161. The request should cite: Saugus River and Tributaries Flood Damage Reduction Study, Lynn, Malden, Revere and Saugus, Massachusetts. The Main Report is in 2 sections and the 8 Volumes of Appendices are in 9 parts. For order information call NTIS at either (703) 487-4600 or 1-800-336-4700.

If you know of any other persons who may be interested in the report, please give them the foregoing information. Should you have any questions, please feel free to contact me at (617) 647-8220. Mr. Robert G. Hunt of my staff coordinated the investigation. Should you desire additional information, he can be reached at (617) 647-8216.

Sincerely,


Daniel M. Wilson
Colonel, Corps of Engineers
Division Engineer





DEPARTMENT OF THE ARMY
WATER RESOURCES SUPPORT CENTER, CORPS OF ENGINEERS
CASEY BUILDING
FORT BELVOIR, VA 22060-5586

January 24, 1990

REPLY TO
ATTENTION OF

Washington Level Review Center

TO INTERESTED PARTIES

Enclosed for your information is a copy of the report on the Saugus River and Tributaries, Massachusetts, project, which includes the final environmental impact statement (FEIS), prepared in accordance with the National Environmental Policy Act of 1969 (NEPA). The FEIS is being filed with the Environmental Protection Agency and is being made available to interested parties for review and comment pursuant to regulations of the President's Council on Environmental Quality for implementing NEPA (40 CFR Parts 1500-1508). Also enclosed is the proposed report of the Chief of Engineers. These documents are currently under review by the heads of Federal agencies and the Governor of the Commonwealth of Massachusetts. Upon receipt of their comments, the report of the Chief of Engineers will be finalized and submitted to the Secretary of the Army for transmittal to Congress.

Any comments you may have on the FEIS should be directed to the Washington Level Review Center, ATTN: CEWRC-WLR-I, Kingman Building, Fort Belvoir, Virginia 22060-5576. The official closing date for the receipt of comments is 30 days from the date on which the notice of availability of the FEIS appears in the Federal Register. This closing date may be somewhat later than 30 days from the date of this letter.

Sincerely,

Kenneth H. Murdock
Director

Enclosures

1. Saugus River Report and FEIS, previously provided.
2. Chief of Engineers' Proposed Report, attached.

See final report in Appendix J
Section 6

DG,

***PROPOSED REPORT**



**DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20314-1000**

**REPLY TO
ATTENTION OF:**

CECW-PM (10-1-7a)

SUBJECT: Saugus River and Tributaries, Massachusetts

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on flood control improvements for Saugus River and tributaries, Lynn, Malden, Revere and Saugus, Massachusetts. It is accompanied by the report of the division engineer. These reports are in partial response to a resolution by the Committee on Public Works of the United States Senate adopted on September 12, 1969. This resolution requested the Board of Engineers for Rivers and Harbors to review the report on the Land and Water Resources of the New England-New York Region, published as Senate Document Number 14, 85th Congress, with a view to determining the feasibility of providing water resource improvements for flood control, navigation, and related purposes in Southeastern New England to enhance the economic growth and quality of the environment.

2. The division engineer considered three basic plans or options using various combinations of structural and non-structural management measures to prevent flood damage in the Saugus River study area. These included a local protection plan, a non-structural plan, and the recommended regional floodgate plan.

3. The division engineer's recommended plan provides for a floodgate structure, 1,290 feet long, which would span the mouth of the Saugus River; acquisition in fee or permanent easement of 1,650 acres of estuary storage area; a tide gate on Sales Creek

*This report contains the proposed recommendations of the Chief of Engineers. The recommendations are subject to change to reflect review by the Washington Level Review Center, findings of the Board of Engineers for Rivers and Harbors, and comments from Federal agencies and the State.

D6₂

CECW-PM

SUBJECT: Saugus River and Tributaries, Massachusetts

providing a 100-year level of protection to homes in the Garfield school area; a dike 3,420 feet long constructed behind the Revere Beach seawall; protection of an existing 20-acre ponding area and construction of a 500-foot concrete wall behind homes along the north end of Revere Beach; 4,290 feet of improvements to structures along the Point of Pines shorefront; 8,900 feet of dikes and walls along Lynn Harbor; and creation of 2.0 acres of intertidal clam flat and 1.0 acre of subtidal habitat for mitigation purposes. Non-structural features of the recommended plan include maintaining existing project-dependent, non-Federally constructed seawalls and associated protective work along the shorefront in Revere, Lynn, and Saugus, and development of a comprehensive flood preparedness plan by the local sponsor. The recommended plan is the national economic development (NED) plan and provides protection to nearly the entire study area from tidal surges associated with the standard project northeaster (SPN).

4. Based on October 1989 prices, the reporting officer estimates the cost of the plan to be \$88,500,000, of which \$57,300,000 would be Federal cost and \$31,200,000 non-Federal cost. Average annual charges, reflecting a 100-year period of economic analysis and an 8 7/8 percent interest rate, are \$8,990,000 including an operation, maintenance, and replacement cost estimated at \$230,000. Average annual benefits are estimated at \$11,390,000, and the benefit-cost ratio is 1.3.

5. I concur in the findings, conclusions, and recommendation of the division engineer.

6. The recommendations contained herein reflect the policies governing formulation of individual projects and the information available at this time. They do not necessarily reflect program and budgeting priorities inherent in the local program and state programs or the formulation of a national civil works construction program. Consequently, I acknowledge that the recommendations may be modified before they are transmitted to Congress as proposals for authorization and implementation funding. However, prior to transmittal to Congress, the local sponsor, the Commonwealth of Massachusetts, interested Federal agencies, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.

H. J. HATCH
Lieutenant General, USA
Chief of Engineers



US Army Corps
of Engineers
New England Division

News Release

Release No 90-85

Contact: Ede Douglas

For Release: Upon Receipt

Phone: 617-647-8264

424 Trapelo Road, Waltham, MA. 02254-9149

January 9, 1990



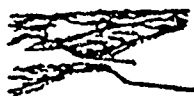
ENVIRONMENT



FLOOD CONTROL



MILITARY
CONSTRUCTION



NAVIGATION



RECREATION



RIVER SYSTEMS



SHORE
PROTECTION

SAUGUS RIVER REPORT ISSUED; COMMENTS SOUGHT

WALTHAM, Mass. — A final report, culminating a four-year study of coastal flooding problems along the Saugus and Pines rivers in Lynn, Malden, Revere and Saugus, has been issued by the U.S. Army Corps of Engineers. The \$2.5 million investigation examined a number of structural and nonstructural solutions for the 4,000-acre study area and recommends implementation of a regional floodgate plan. The Saugus River and Tributaries Flood Damage Reduction final report addresses comments made during a public review held several months ago.

"The recommended plan would provide coastal flood protection to 5,000 residential, commercial and industrial buildings, reduce damages to major utilities and reduce disruption of regional public transportation in the four community area and Boston's north shore," according to Colonel Daniel M. Wilson, head of the Army Engineers in New England. "The plan also incorporates parkland for public recreation and, through a real estate interest of 1,650 acres of estuary wetlands, protects natural flood water storage areas associated with the Saugus and Pines rivers, which would help preserve the area's valuable environmental resources."

Implementation of the Engineers' recommendation would cost an estimated \$88.5 million, with the federal government paying \$57.3 million (64.7%) of the total cost. The remaining \$31.2 million would be funded by nonfederal interests, including \$9.2 million in real estate and alterations to existing utilities and \$22 million in cash over the construction period planned to start in 1994.

more D7,

The principal element of the plan is the construction of a 1,290-foot-wide tidal floodgate structure at the mouth of the Saugus River to prevent tidal surges from entering the river and causing flooding in the four communities. This structure would incorporate 600 feet of gated openings to assure safe passage for navigation and natural flushing of the estuary. In addition, a combination of dikes, walls, stone revetments, beaches and sand dunes along the Lynn shorefront and at Point of Pines in Revere are recommended. A raised embankment behind part of Revere Beach would also serve as a flood control dike and provide park area for public recreation.

The Engineers are soliciting public comments on the final recommended plan until February 9, 1990, with a review period starting January 10. Copies of the report are available for review at the public libraries and town/city halls in each of the communities or at the Army Engineers Waltham, Mass., headquarters. In addition to the Engineers 30-day public comment period is one for the state's Massachusetts Environmental Policy Act (MEPA) review. Comments should be forwarded to the Director, Washington Level Review Center, Casey Building, Fort Belvoir, Virginia 22060 (Reference CWIS No. 14021), with a copy to Mr. David Shepardson (Reference EDOEA 6497) at the Executive Office of Environmental Affairs, MEPA Unit, 100 Cambridge Street, Boston, MA 02202.

The study evaluations and report findings are being reviewed by the Washington Level Review Center, Board of Engineers for Rivers and Harbors, the Chief of Engineers and the Assistant Secretary of the Army for Civil Works. If approved at those levels, the project would be forwarded to the Congress for authorization for construction.

PUBLIC NOTICE ATTACHED

D7₂

In the period December 16 to January 2, 1990 the Secretary issued certain sites that the following Environmental Impact Reports do not satisfy under the General Laws, Chapter 91A, Section 62, and with the regulations governing the preparation of Environmental Impact Reports.

AREA NO.	PROJECT AND LOCATION	DATE OF ACTION
1483	DRAFT INDEPENDENCE PARK, BARNSTABLE	JAN. 2, 1990
1484	DRAFT WESTON OFFICE PARK, WESTON	DEC. 18, 1989
1478	FINAL 15 Y. MICHON O'BRIEN HWY., CAMBRIDGE	DEC. 18, 1989

NOTICES: ENVIRONMENTAL IMPACT REPORTS RECEIVED

The following Environmental Impact Reports are available for review and comment.

AREA NO.	PROJECT AND LOCATION	DUE DATE FOR COMMENTS
----------	----------------------	-----------------------

6924	ROCK CRUSHING, BOSTON CAMERON HALLS, INC. (FOR INFORMATION, NANCY BAKER, 727-5830 X 301) (COPIES, C. SCHLESINGER, 508 371-4000)	FEB. 12, 1990
------	--	---------------

1490	DEIR CONCRETE FACILITY, LYNN ATTRECO (FOR INFORMATION, JOE FREEMAN, 727-5830 X303) (COPIES, C. LIPKA, 508 371-4000)	FEB. 12, 1990
------	---	---------------

1489	DEIR DEIR FIELD CTR., WENDELL R. J. KELLY CO. (FOR INFORMATION, NANCY BAKER, 727-5830 X 301) (COPIES, K. DUFF, 617 338-7277)	FEB. 12, 1990
------	--	---------------

6928	DEIR WRECKMASTER RECYCLING FAC., TAUNTON WRECKMASTER ENVIRON. SYSTEMS (FOR INFORMATION, JACKI WILKINS, 727-5830 X 302) (COPIES, J. KUNER, 508 777-2207)	FEB. 12, 1990
------	---	---------------

6713	DEIR DANIEL LANDFILL, DOUGLAS DANIEL ENVIRON. ASSOC. (FOR INFORMATION, JULIENNE DUBHER, 727-5830 X 306) (COPIES, S. O'HEARN, 617 237-5000)	FEB. 12, 1990
------	--	---------------

6930	DEIR COMBINED SEWER OVERFLOW FAC., PLAM, BOSTON, CAMBRIDGE, CHELSEA, SOMERVILLE MIRA (FOR INFORMATION, JOE FREEMAN, 727-5830 X 303) (COPIES, D. MURRAY, 617 242-6000)	MAR. 13, 1990
------	---	---------------

6409	DEIR REPLACEMENT OF ROUTE 140, FRANKLIN DPM (FOR INFORMATION, JACKI WILKINS, 727-5830 X 302) (COPIES, DPM, 978-7117)	FEB. 12, 1990
------	--	---------------

6497	DEIR FLOOD DAMAGE MITIGATION STUDY, SAUCUS COMPS OF ENGINEERS (FOR INFORMATION, DAVE SHEPARDSON, 727-5830 X 304) (COPIES, E. WILSON, 617 847-8216)	FEB. 12, 1990
------	--	---------------

NOTICES: ENVIRONMENTAL IMPACT REPORTS RECEIVED

The following Environmental Impact Reports are available for review and comment.

7852	DEIR ROCK CRUSHING PLANT, OXFORD SCAYNE CONSTRUCTION CO. (FOR INFORMATION, DAVE SHEPARDSON, 727-5830 X 304) (COPIES, DUNCAN BROWN, 508 947-1075)	FEB. 12, 1990
------	--	---------------

7643	DEIR OLMSTED PLAZA, BOSTON OLMSTED PLAZA ASSOCIATES (FOR INFORMATION, CONNIE GETEX, 727-5830 X 307) (COPIES, NMM ASSOCIATES, 508 371-1692)	FEB. 12, 1990
------	--	---------------

7488	DEIR OFFICE BLDG. ADDITION, CAMBRIDGE ALTD ENTERPRISES (FOR INFORMATION, NANCY BAKER, 727-5830 X 301) (COPIES, J. CANN, 439-4394)	JAN. 25, 1990
------	---	---------------

7570	DEIR WINDFIELD PARK/GREENLEAVES, MADLEY/AMHERST JERAL GATES & RICHARD JOHNSON (FOR INFORMATION, CONNIE GETEX, 727-5830 X 307) (COPIES, WILLIAM GARRITY, 413-584-7444)	JAN. 25, 1990
------	---	---------------

7466	DEIR PUTNAMVILLE ESTATES, DANVERS PUTNAMVILLE DEVELOPMENT CORP. (FOR INFORMATION, NANCY BAKER, 727-5830 X 301) (COPIES, CARL BALSLEY, 246-2900)	JAN. 25, 1990
------	---	---------------

6846	DEIR COMMONWEALTH ARMOY/899-925 COMMON. AVE, BOSTON BOSTON UNIVERSITY (FOR INFORMATION, NANCY BAKER, 727-5830 X 301) (COPIES, THOMAS HEAD, 357-7044)	JAN. 25, 1990
------	--	---------------

7333	DEIR HEATH BROOK PLAZA, TEMPEST QUINCY & CO. (FOR INFORMATION, JACKI WILKINS, 727-5830 X 302) (COPIES, MARK KENNEALLY, 890-8999)	JAN. 25, 1990
------	--	---------------

7617	DEIR DEERFIELD RIVER CLUB, CHARLESTON DEERFIELD RIVER CLUB (FOR INFORMATION, CONNIE GETEX, 727-5830 X 307) (COPIES, JEFFREY VOLTS, 413-584-7444)	JAN. 25, 1990
------	--	---------------

7436	DEIR SIGNATURE PLACE, HOLYOKE SIGNATURE DEVELOP. CORP. (FOR INFORMATION, DAVE SHEPARDSON, 727-5830 X 304) (COPIES, PAUL FINGER, 893-2110)	JAN. 25, 1990
------	---	---------------

7165	DEIR ELIOT SQ. OFFICE BLDG., CAMBRIDGE CARPENTER/ELIOT SQ. ASSOC. (FOR INFORMATION, NANCY BAKER, 727-5830 X 301) (COPIES, THAC COPE, 924-1770)	JAN. 25, 1990
------	--	---------------

7560	DEIR DESIGNER PLACE, BARNSTABLE SHIELDS CO. (FOR INFORMATION, JOE FREEMAN, 727-5830 X 303) (COPIES, WALTER BAKOWSKI, 330-5300)	JAN. 25, 1990
------	--	---------------



US Army Corps
of Engineers
Board of Engineers
for Rivers and Harbors
Kingman Building
Fort Belvoir, Va 22060-5576

News Release

Release No.

Contact:

Edward A. Greene

For Release:

Phone:

9 March 1990

(202) 272-0011

RIVERS AND HARBORS BOARD CONSIDERS FOUR WATER RESOURCES REPORTS

FORT BELVOIR, VIRGINIA. The Board of Engineers for Rivers and Harbors of the U.S. Army Corps of Engineers announced today that it has recommended favorable action on four reports.

A summary of each of these board actions (listed by State in the index below) is attached.

<u>STATE</u>	<u>REPORT TITLE</u>	<u>PAGE</u>
California	Oceanside Harbor	1
California	Ventura Harbor	2
Louisiana	Aloha-Rigolette Area	3
Massachusetts	Saugus River and Tributaries	4 ✓

Members of the board in attendance:

Major General Richard S. Kem, Chairman, Deputy Chief of Engineers, Washington, DC;
Major General Robert M. Bunker, Division Engineer, South Atlantic, Atlanta, Georgia;
Brigadier General (P) John F. Sobke, Division Engineer, South Pacific, San Francisco, California;
Brigadier General Arthur E. Williams, Division Engineer, Lower Mississippi Valley, Vicksburg, Mississippi;
Brigadier General Gerald C. Brown, Division Engineer, North Atlantic, New York, New York;
Brigadier General Pat M. Stevens IV, Division Engineer, North Pacific, Portland, Oregon.

D9,

--Saugus River and Tributaries, Massachusetts

The Board of Engineers for Rivers and Harbors recommended approval of storm damage reduction improvements within the Saugus River estuary area. The plan proposed by the New England Division Engineer, identified as the Regional Floodgate Plan, is a combination of structural and nonstructural features. Non-structural features include fee acquisition of the estuary storage area (about 1,650 acres) and maintenance of existing seawall, beaches, and tidegates. Structural improvements include: (1) a tidal floodgate structure at the mouth of the Saugus River with a navigation gate and flushing tainter gates; (2) a tide or sluice gate on Sales Creek; (3) a park dike behind the Revere Beach seawall; (4) protection of an existing ponding area and construction of a concrete wall behind homes at the north end of Revere Beach; (5) improvements to walls, revetments, dunes, and beach at Point of Pines; and (6) walls and dikes along Lynn Harbor. Fish and wildlife mitigation features in the plan include creation of 2.0 acres of intertidal habitat and 1.0 acre of subtidal habitat.

The first cost of the recommended project is \$88,500,000 (based on October 1989 prices) of which \$31,800,000 would be non-Federal. The benefit-cost ratio is 1.3 to 1.



US Army Corps
of Engineers
New England Division

News Release

Release No.

90-201

Contact:

Sue Douglas

For Release:

Upon Receipt

Phone:

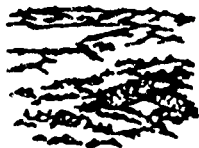
617-647-8264

424 Trapelo Road, Waltham, MA. 02254-9149

March 30, 1990



ENVIRONMENT



FLOOD CONTROL



MILITARY
CONSTRUCTION



NAVIGATION



RECREATION



RIVER SYSTEMS



SHORE

SAUGUS PROJECT GAINS FIRST APPROVAL

WALTHAM, Mass. — A plan to reduce coastal flood damages to Revere, Lynn, Saugus and Malden has been approved by the U.S. Army Corps of Engineers Board of Engineers for Rivers and Harbors in Washington. The \$88.5 million plan must also be approved by the Secretary of the Army and be authorized and funded by Congress and by the Commonwealth of Massachusetts.

"The Board has approved our findings and recommendations which stemmed from a study of coastal flooding problems along the shorefronts and the Saugus and Pines rivers in the four communities," according to Colonel Daniel M. Wilson, head of the U.S. Army Corps of Engineers in New England. "The \$2.5 million investigation examined a number of structural and nonstructural solutions for the 4,000-acre study area and recommends implementation of a Regional Floodgate Plan. The Metropolitan District Commission, project sponsor, and the four sponsoring communities have been instrumental in its formulation."

The plan will provide coastal flood protection to 5,000 residential, commercial and industrial buildings, reduce damages to major utilities and reduce disruption of regional public transportation in the four community area and Boston's north shore benefitting well over 300,000 people. It also incorporates parkland for public recreation. Natural flood water storage areas associated with the Saugus and Pines rivers would be preserved through a real estate interest of 1,650 acres of estuary wetlands. Preservation and management of the wetlands will benefit the unique recreational and natural resources of this saltwater estuary, the largest near Boston.

more

D/O

The principal feature of the plan is the construction of a 1,290-foot-long tidal floodgate structure at the mouth of the Saugus River which will prevent tidal surges from entering the river and causing flooding in the four communities. This structure would incorporate 600 feet of gated openings to assure safe passage for navigation and natural flushing of the estuary. A combination of dikes, walls, stone revetments, beaches and sand dunes along the Lynn shorefront and at Point of Pines in Revere will complete the project. A raised embankment behind part of Revere Beach would also serve as a flood control dike and provide park area for public recreation.

The federal government would pay \$57.3 million (64.7%) of the plan's estimated \$88.5 million cost, with the remaining \$31.2 million funded by nonfederal interests.

